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FEB. 15–18	**American Institute of Mining and Metallurgical Engineers, New York.**
APR. 8– 9	**American Petroleum Institute, Division of Production, Eastern District, Wm. Penn Hotel, Pittsburgh.**
7– 9	**American Association of Petroleum Geologists, Texas Hotel, Fort Worth, Texas.**
MAY 5– 6	**Petroleum Electrical Association, Houston.**

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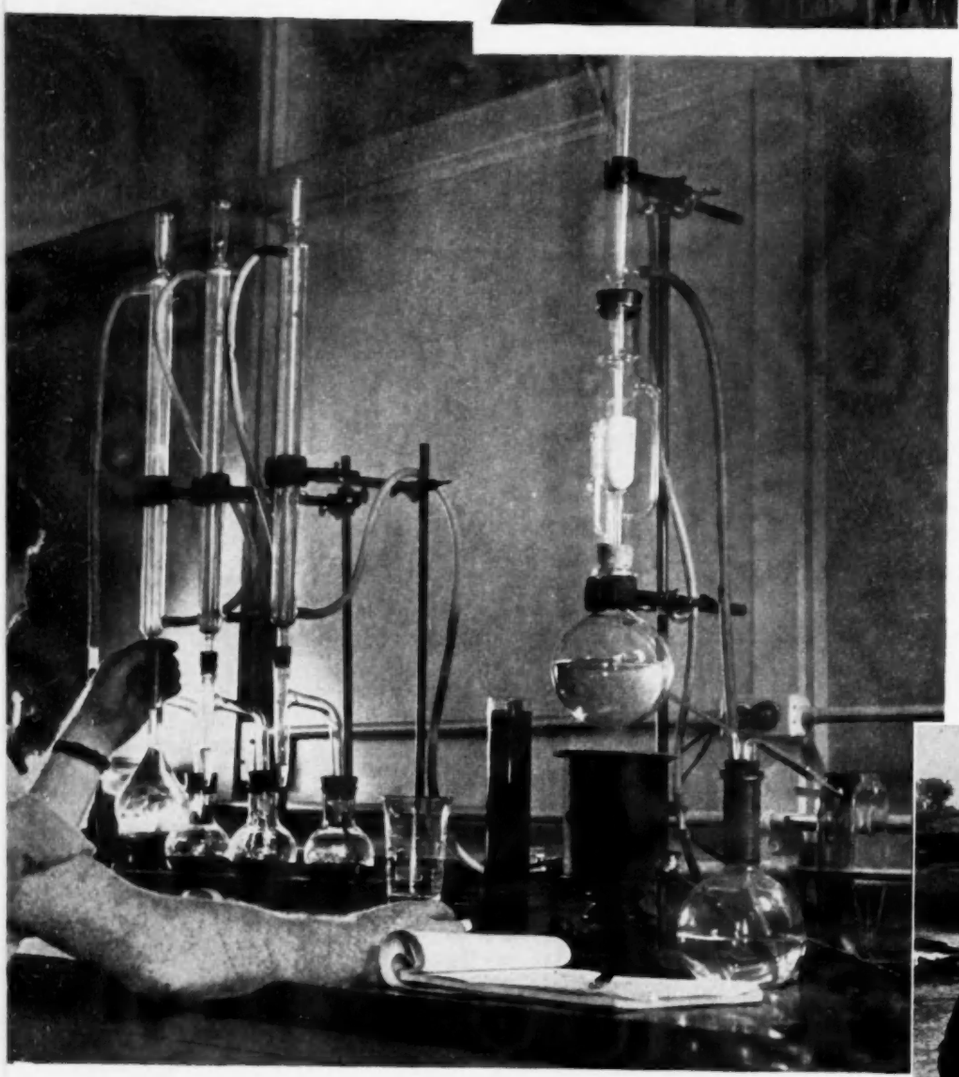

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The Changing Panorama

Demand Expected to Reach New High

FOR 1943 it is forecast that total demand for all oils for the United States will be 5 to 7 percent greater than requirements in 1942, which were themselves only 2 percent under the record demand of 1941. Therefore, a new high in demand is indicated for this year.

By the end of 1943, it is predicted, the demand for petroleum will be 450,000 barrels a day greater than that now prevailing, after a steady and relatively sharp climb during the year.

The demand will be stimulated by extraordinary military and industrial requirements. Fuel oils will be needed in record-breaking quantities, for industry, naval operations, shipping, and heavy railway traffic; while motor fuel, lubricants, diesel oil, aviation gasoline, and other products will be needed in larger quantities by enlarged armies, shifted from the defensive to the offensive.

Helping to make possible the fulfillment of the unprecedented demand will be enlarged inland transportation facilities within the United States and increased numbers of tankers to move oils to the fighting fronts.

In meeting the comparatively large demand in 1942, with imports drastically restricted, it was necessary not only to draw heavily on wells within the United States but also to withdraw large quantities of both crude and refined oils from storage, and stocks were reduced to unsatisfactorily low levels. The storage tanks therefore cannot afford this relief again in 1943, and it will be necessary to step up domestic crude production by a large amount specifically to compensate for inability to draw much further on storage. Crude-oil production will have to be increased in a higher percentage than the increase in demand.

Stocks of all oils in the United States were reduced by 58,267,000 barrels in 1942, a decrease of 10.6 percent, in declining from 551,713,000 barrels January 1 to only 493,446,000 barrels December 31.

Stocks of refinable crude were lowered 13,534,000 barrels (5.5 percent), to 233,350,000, or within 4,000,000 barrels of the 20-year low level of late 1939, when Mid-Continent oil fields were shut down for 2 weeks.

From stocks of refined products the industry took 45,875,000 barrels, lowering the total from 290,375,000 to 244,500,000 barrels, a 16-percent reduction. Motor-fuel stocks were reduced 18,244,000 barrels, a withdrawal justified by curtailed demand for this product; but heavy drafts on both heavy and light fuel oils represented depletion of needed inventories. Stocks of residual fuel oil were cut 22,022,000 barrels or 26.5 percent, from 83,195,000 to 61,173,000 barrels, and stocks of distillate fuel oil were lowered 6,043,000 barrels, or 12.1 percent, from 49,926,000 on December 31, 1941, to 43,883,000 barrels December 31, 1942.

Japan Not Sure of Conquered Supply

JAPAN'S ill-gotten oil gains in the East Indies and Burma are held with unconcealed uneasiness. This is the conclusion to be drawn from statements of a Japanese official, which indicated on the one hand that the carefully destroyed oil properties do not meet Japan's oil needs and on the other hand that Japan is not too sure of the ability to hold the conquered lands.

Kazuo Aoki, Minister for Greater East Asia, stated in an address to the Fourth Economic Conference, according to radio from Tokyo, that the Japanese would not rely wholly upon oil production in conquered areas, including the Netherlands Indies, but would develop additional synthetic petroleum sources. He explained that while production would be concentrated in the southern territories of the broadened empire, provisions would be made also to increase production of synthetic petroleum in Manchukuo, northern China, and northern Japan.

Although the Japanese captured some wells that had not been destroyed, particularly in Borneo, reports indicate that very thorough destruction of oil properties, from wells to refineries and loading terminals, was achieved by the Dutch, British, and Americans in the Netherlands Indies and Burma in advance of the invaders.

Men who have lived and worked in the Far Eastern fields are confident that the Japanese will have great difficulty in redeveloping any substantial production. In Burma, especially, where the destruction was very thorough, the restoration of production will be slow and hard, as subsurface conditions are peculiar, and knowledge of the original development will be highly essential for redevelopment.

Reserve Maintenance For War Needs

FROM a subscriber, Thomas M. Galey, Independence, Kansas, has come the suggestion of a new policy with regard to governmental oil reserves, designed to provide and maintain reserves that could be produced in large volumes in wartime or other emergencies.

"It is becoming apparent," wrote Mr. Galey, "that our Naval Petroleum Reservations will not serve their intended purpose unless they can be made to produce upon short notice.

"Under modern engineering, these reservations might be developed fully in peacetimes and in such a manner that their producible areas could be discovered and their production made quickly available. Casings cemented from bottom to top would last for many years. If larger casings than usual were used, smaller strings could be cemented inside years hence, if that became necessary.

"It is not inconceivable that completions could be so engineered that they would be instantly available a whole century hence. It is likely that in areas deficient in gas, pressures might be built up and maintained from outside sources. These things would normally take years of study and accomplishment.

"Assuming that our present petroleum supply suddenly became insufficient for our war requirement so that we had to call upon our Naval reservations, there would be difficulties and delays so that it might require several years of intensive effort before adequate relief could be had. Valuable time and equipment might be sacrificed in drilling the inevitable dry holes. One must pause when he contemplates how we could get a million barrels of sustained increase of daily yield.

"If that call came today, we would have the problems of material and manpower. No doubt the fate of nations would be decided before we could utilize our petroleum reservations."

Certainly, there can be no disagreement with the objective pointed to in the above suggestion—the use of any needed protection of the nation's ability to produce all the oil needed in any emergency.

However, there will be many views on how that objective should be achieved, and in its characteristic and traditional spirit, the oil industry doubtless will want to shoulder largely itself whatever the burden may be in that connection, although it will have to have the cooperation and confidence of the government.

One way which quickly comes to mind for guaranteeing adequate oils in

extraordinary times is for the government to pursue toward the oil industry a new policy of encouraging, by whatever means necessary, constant, aggressive effort to increase known crude reserves. Although the industry has of its own initiative maintained consistently ample reserves for ordinary times, it could, with proper encouragement and use of practical and effective incentives, go beyond former concepts of needed reserves and develop and maintain in addition whatever emergency reserves are deemed by the Army and Navy as necessary.

In the fulfillment of the assignments that it has been given during this war the industry has merited and received generally the highest praise, and it can be depended upon also in the future to do whatever needs to be done in assuring the nation's safety and freedom, if it is given the opportunity and if the necessary practical considerations are duly recognized in governmental policy toward the industry.

Turkey's Entry Could Shorten War

By ROY LEIGH

TURKEY'S accession to the cause of the United Nations, the faint promise of which is suggested by recent dispatches pertaining to Churchill's visit to that country, offers the only discernible hope for an early end of the European phase of the war. If and when Turkish air bases should become available to Allied planes, Roumanian oil facilities forthwith would become vulnerable to air attack. The entire oil industry of the Balkan kingdom—production, refining, pipe line, and cargo loading—lies within one hour's flying time from Turkish air dromes. Shipments of oil over Black Sea routes and along the Danube waterway could be crippled by planes based on Turkish soil. The Roumanian oil industry represents the chief source of Germany's fuel supply; and its loss could not long be survived by the Wehrmacht.

Scattered oil wells do not afford good targets for bombing, but Roumanian refineries, pumping plants, railroad-loading racks, and cargo-loading stations offer glaring bull's eyes for attack by air. The bombing of shipping facilities at Constantza, on the Black Sea, and at Giurgiu, and elsewhere, on the Danube River might deal an irreparable injury to the German war program.

Other items of interest to oil men have been heard in radio broadcasts from London in which mention was made of the destruction by the R. A. F. of oil refineries in Belgium and "oil installations" in Holland. The extent to which European oil facilities may have been damaged or destroyed by aerial bombing is shrouded in the mists of censorship; but, if air power can do half of what is claimed for it, the oil industry of the Continental Block must by now have suffered severely at the hands of the British.

Hitler's oil problem is not different from that of ours in New England, except insofar as he had time and opportunity to plan and prepare for war, the date of the outbreak of which was known only to him. In Western Europe, as in the eastern part of the United States, the normal movement of petroleum products was from the sea coast inland, by barge and rail. As we contemplate our shortage of tank cars, we can derive some comfort from the probability that the Germans are in the same boat with us.

Allied sources of information have stressed the point that locomotives on the conquered continent have been chosen as targets for a campaign of selective bombing. Such a program is designed to disrupt transportation of all military supplies, including gasoline and other fuels.

Petroleum economists familiar with the oil industry of Western Europe have stated that the Allies will be remarked for their oversight if they fail to select refineries, gasoline-extraction plants, hydrogenating plants, and other oil installations for special attention at the hands of air force bombardiers, as is being done in the case of locomotives.

The strafing of locomotives is an excellent idea, but the blasting of refineries might prove to be a better one. Regardless of whether Germanized Europe enjoys a small surplus or suffers from a slight deficit of petroleum and synthetic fuels, the fact remains that the German war program could not possibly survive loss of any considerable portion of its refining capacity, such as is now exposed to aerial attack by planes based on the British Isles.

Untrained Men Will Increase Accidents

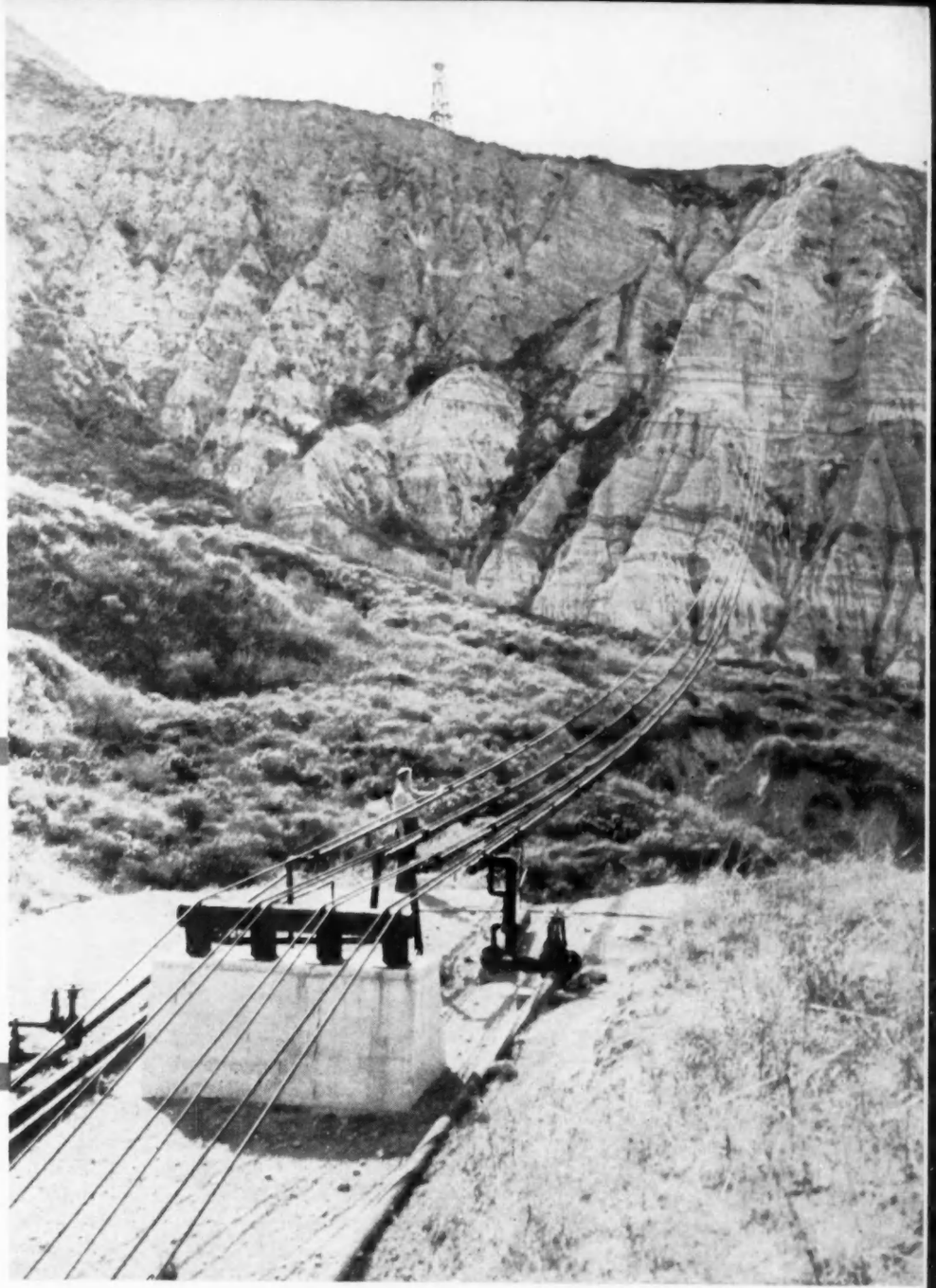
ALL industry, faced with the problem of incorporating unprecedented percentages of untrained workers into the operating personnel, finds the accident rate skyrocketing to such an extent that the loss of production from injuries becomes nearly as serious a problem as that of voluntary absenteeism. In the oil industry this flux is most noticeable in the drilling department. It is not unusual for a crew to consist of one driller (experienced on the floor, if not too familiar with the brake) and four boll weevils, none of whom may have seen a rig prior to starting on the well now being drilled.

For such men, as with all new men in pipe-line maintenance gangs, station crews and lease-operating posts, there is not the background of safety instruction, of safety thinking, which characterized the personnel of pre-Pearl Harbor days. It is necessary to start from the beginning and inculcate safety thinking in the minds of the new men: a process both time-consuming and production-slowing.

Some companies, when competent instructors are available, are crowding into one or two days' instruction—during working hours—much of the groundwork normally acquired during a year's infrequent attendance at safety meetings. Others, borrowing from the railroad plan of breaking in new men, put an old-timer on the job as instructor and supervisor while the new man gets the proper start.

The oil industry is faced with the problem of still further simplifying many of its operations so that they may be mastered by, and safeguarded against, men who lack totally any familiarity with either equipment or processes under their charge. By meeting this problem squarely and promptly, the oil industry can be prepared to offset the retarding effect of new personnel, and thus avoid the staggering totals of lost man-hours being sustained by those manufacturing industries which have failed to slacken tempo or redouble safeguards as the new blood finds its way along strange channels.

The spirit among smaller oil companies of "working to win" is amply demonstrated by Beacon Oil & Refining Company, Henderson, Texas. Instead of the customary annual banquet for employes, the company is celebrating its twelfth anniversary by more war work. The annual celebration has been suspended for the duration.



Stringing the four all-welded pipe lines across the 1150-foot canyon was done by company men and machines. Joints were fed on to line through openings between pipe legs on the concrete support.

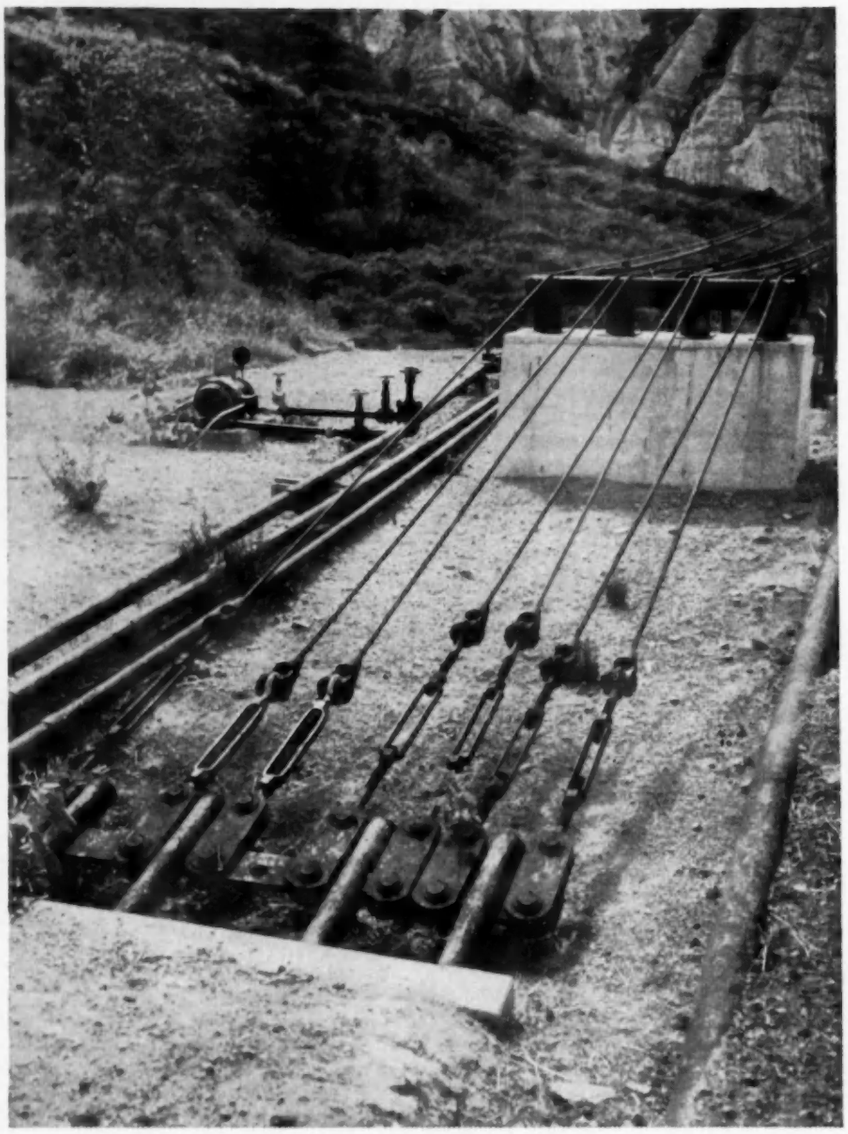
Using only materials on hand and conventional oil field hoisting equipment to construct span across ravine eliminates the need for nine miles of pipe

Company Saves Much Pipe by Building Suspension Bridge

By GILBERT M. WILSON, Staff Writer

INSTALLATION of an 1150-foot suspension cable over a particularly difficult section of terrain, recently saved a major producing company approximately 48,000 feet of line pipe of sizes ranging from 2-inch to 4-inch. Several wells in the extreme end of the field were on a portion of the structure which lay on the opposite side of a particularly rugged, deep ravine, and to serve them with oil and wet-gas lines, as well as the water and dry-gas-fuel lines, it was necessary to either go via a 2½-mile circuitous route around the lower end of the canyon, or span the area with some sort of suspension cableway or bridge.

The suspension cable was finally decided upon as being the least costly and the project was performed without difficulty and in a remarkably short period. All engineering and actual field work was done by company engineers and field workmen. Many of the machines and hoisting equipment used on the job were those used regularly in the production and pipe-line work. All equip-



The deadman anchoring the cable ends is a block of concrete buried at lower left side of the picture. Note sturdy fittings and novel means of anchoring clevises to projecting sections of drill pipe.

ment installed, except for the pipe itself, was used material, including the cables made from wire lines.

The area spanned is a highly faulted, broken up canyon which actually is the ravine formed by the slippage of a huge mass of earth along a series of minor faults. This factor alone precluded attempting to lay and maintain lines down through and across this rough terrain. The area is still active and is consequently being subjected to occasional minor slides and movements of the earth. Of further interest is the fact that some of the older, more shallow wells which lie at the lower end of the canyon are situated on this slowly moving mass of earth, and the production department has been and still is being hard pressed to prevent shearing off of the casing at depths ranging from approximately 30 to 90 feet, depending upon where the bottom of the sliding mass intersects the wells. Shearing of these wells is now being temporarily thwarted by the excavation and cribbing of shafts around the casing down to the fault plane, allowing the upper body of earth to move a distance of some 16 feet before again contacting the casing string.

One of the first operations in spanning the canyon with the cables consisted of building suitable anchors at either side of the canyon. The fact that the ground in this area is composed largely of light sediments made it a problem to find some effective means of anchoring that would support the weight of the four suspended pipe lines plus the weight of the supporting cables.

Both anchors were substantially the same in construction. The one on the nearer side consisted of a block of reinforced concrete measuring 9 by 10 feet in section and 12 feet long. This block was set in the ground approximately 50 feet back from, and parallel to the rim of the canyon. Firmly anchored and set in the concrete are four lengths of 4-inch drill pipe, each pointed toward the canyon and at a slight upward angle. To the outer ends of the drill pipe sections were fastened the clevises which are tied to the ends of the heavy cables.

Approximately midway between the end of these drill-pipe anchors and the canyon rim a concrete abutment was built, in the top of which was set a 4-legged "horse" of welded 8⅝-inch casing. This support was constructed at the proper height to permit resting the cables over it, bringing the latter down to the anchor in a straight line and eliminating any downward pull at that point. The support likewise provides a means or place for sliding the joints of pipe out onto the cable as the string is welded and pulled out over the canyon.

Well-Pulling Units Provide Power

The next operation consisted of getting a light line across to the opposite rim of the canyon, which, incidentally is some 350 to 400 feet higher than the nearer side, a fact that made the entire operation somewhat more difficult all the way through the job. The man carrying the first line across had to scale the opposite wall of the canyon, bringing it up to where a line let down from an anchored well-pulling unit could be tied to it. Following the initial bridging of the canyon with the light line, a ½-inch sand line was pulled across by the pulling hoist, after which the suspension cables were pulled over. These cables, 1⅛-inch size, were used lines but in excellent condition and were well tarred to protect them from corrosion. One of the principal advantages realized in employing a used cable for this purpose was in the fact that much of the initial line stretch would have already been taken out, necessitating a minimum of take-up after the cable had been installed. With the exception of the 2-inch dry-gas line, which was supported by a single cable, each pipe line was carried by two cables. The pipe lines were spaced two feet apart, a distance which was considered ample in preventing them from striking each other out over the center of the canyon when swayed by a high wind.

The pipe lines were of new seamless pipe and joints were all-welded. Regularly-spaced, shop-made hangers were used to support the lines beneath the cables. The hangers were made up out of narrow sections cut from salvaged pieces of larger sized pipe. The 2-inch dry-gas line had 3-inch loops, the 3-inch water and oil lines had 4-inch loops,

and the 4-inch wet-gas line had 6-inch loops. To the top of each loop were welded the cable thimbles, likewise shopmade. These thimbles consisted, in the case of those lines supported by the double cable, of two short lengths of 1¼-inch pipe the same length as the width of the loop, and which were welded in place atop the loop. In addition to this, a length of ⅛-inch by 2-inch strap iron was bent over the thimbles and on down over each side, then welded to the body of the loop, making it virtually impossible for the thimbles ever to pull off.

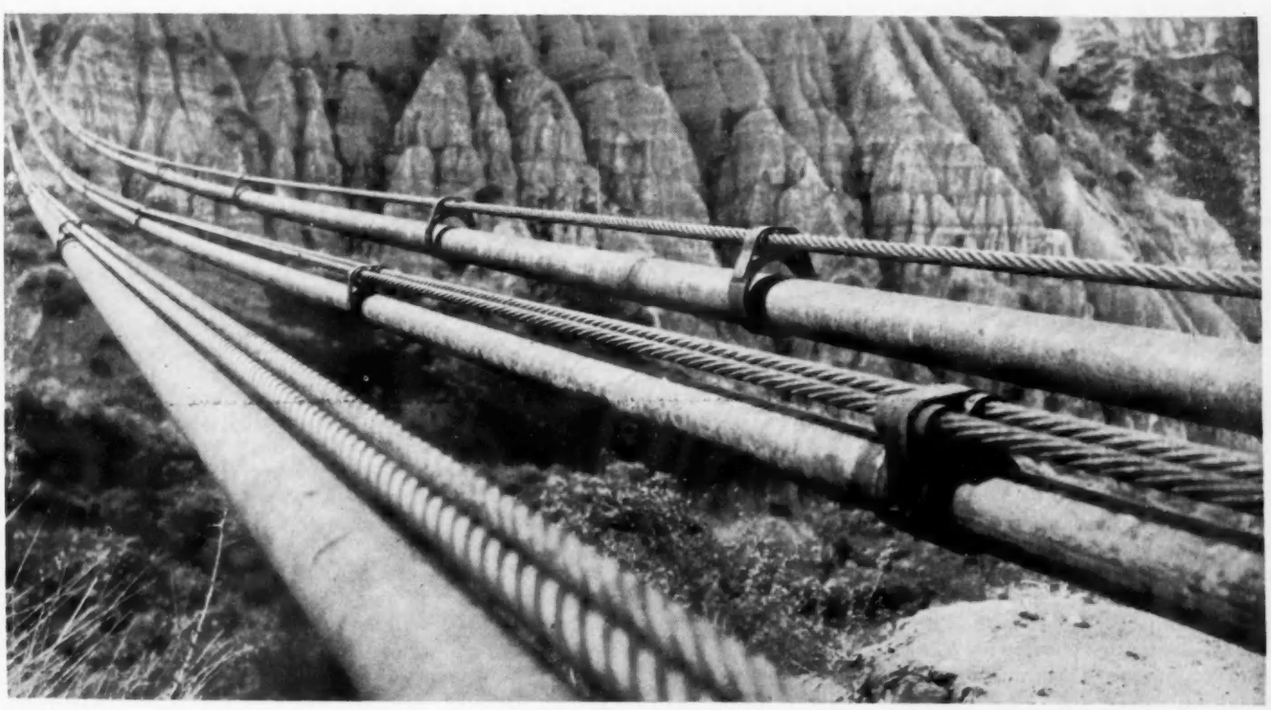
Before the cables for each pipe line were permanently tied to the clevis connecting it to the deadman, the required number of pipe hangers were strung on the cables and grouped closely together in the space between the edge of the canyon and the abutment or cable support. The pipe was "fed" on to the cables from the back side of the cable support by inserting each joint through the space between the 8⅝-inch pipe legs of the support. As a joint was run out under the cable, the hangers were slid onto it, and a welder, standing on the edge of the canyon rim, then welded the joint to the preceding one. Pipe hangers were spaced along the joint and then welded in place by running a short bead on the bottom where the tubing contacted the bottom inside of the hanger. Hangers on the heavier pipe lines were spaced up to 12 feet apart, while those on the 2-inch line were spaced at 15-foot intervals. The thimbles through which the cable was threaded were of course allowed to slide freely along the line. Following the welding and spacing of hangers, the pulling unit hoist on the far rim would be signalled to pull the completed section of the line out over the canyon another interval to permit welding on the next joint.

The same procedure was followed on each of the 1150-foot pipe lines. Despite the difficulties of laying a pipe line under such conditions, it required only 10 days to string the four pipe lines across the canyon. After the lines were completed, they were given a thorough pressure test. A man sent out along the none-too-steady swaying suspension bridge, inspected each of the joints and all were found to be tight.

After the pipe lines were strung across, the cables were tightened up and adjusted for proper tension by means of heavy 1½-inch turnbuckles located between the deadman and sturdy clevises. These clevises, one being provided for each cable, were shopmade and consisted of two pieces of 1-inch steel plate approximately 6 inches wide and 16 inches long, each having a 2¼-inch hole bored at each end with 12 inches between centers. A 4½-inch long cottered steel pin thrust through each end of the clevis secures the turnbuckle at one end and anchors to the deadman at the other end. The actual tie-in to the deadman is a long piece of 1-inch steel plate 6 inches wide which is run through corresponding slots cut lengthwise near the end of each of the four pieces of drill pipe projecting out of the buried concrete block. Holes drilled at proper intervals along the length of this steel bar provide the tie-in for the clevises.

It had been planned originally to place spacer bars between each of the lines at regular intervals, particularly out toward the center of the canyon, to prevent the lines striking each other during the strong wind storms that frequently occur in the area. However, after the lines were installed, it was found that those winds which did affect the suspension bridge would sway all four lines in unision, and each line would keep its proper distance from the others, so no spacers were installed. To facilitate making emergency repairs that might be necessary at any time, the ½-inch sand line that was used in the construction work was left lying on the ground beneath the cableway.

One of the outstanding and significant features in the construction of this cable-suspended pipe line, outside of the fact that the system has since proven itself to be thoroughly satisfactory, is that the job was done almost entirely by company and local personnel, from the engineering down to the actual laying and finishing of the lines, and through use of only materials on hand and with regular conventional oil-field hoisting and mechanical equipment. It is merely one of the many things which indicate that the oil industry is a nearly self-sustaining industry and is capable of doing many things out of the ordinary when equipment, such as the approximately 9 miles of line pipe saved on this project, must be conserved.



Showing construction and arrangement of shop-made cable thimbles. Hangers are tack-welded to the bottom side of the pipe to keep them properly spaced along entire length of the line.

Consideration of Well Characteristics in Design of Intermitter Installations

The design of sub-surface settings for intermitter operation involves a proper and adequate consideration of well conditions for maximum efficiency of performance

By FRANK BRIGGS, Staff Writer

PRODUCTION of oil by gas lifting is an old method, one of various applications and one responsible for many opinions and much published discussion. There are individuals familiar with its methods who swear by gas-lift, others at it; some cause oil to be raised very economically, some prefer other methods. In the final analysis, the successful operators have conditions suitable for using gas-lifting methods, operate them properly and efficiently. The major requisite for economical operation is an abundant source of cheap gas; the limitation on operation is the production rate.

The gas-lift intermitter is a special adaptation of straight gas lift; the intermittent action allows an accumulation of fluid in the well to be displaced in a column (or slug) by periodically sending a charge of gas into the system at the base of the fluid column. The operation is similar to the action of the expanding explosive gases of a cannon propelling the shell through the gun barrel. If the fluid column is great enough, it reaches the surface in an unbroken condition with the gas beneath it as the motivating agency.

There are various modifications of the principles involved in the intermitter. Principally, there are those devices that operate the intermitter valve by means of a weight bar controlled from the surface by a wire line. A second type of intermitter is operated by admitting or excluding pressure in the casing through a control valve in the surface gas line. Another merely requires a differential pressure between tubing and casing for its operation. The fluid level in the chamber, working upon a float mechanism, determines the operation of another type. Still another popular intermitter device in use is operated by a mechanism that rotates the inside pipe slightly (or may change its position in a vertical direction) to start and stop the intermitting cycle.

Aside from the methods of control, there is also a difference of arrangement in subsurface design of intermitters, and, incidentally, claims for benefits of operation. Some may be able to produce sand-cut fluid better, some may give less trouble in corrosive wells, some may have better gas-oil ratios. Regardless of these differences, the general design for subsurface setting of the various component parts of the complete intermitter unit depends upon the individual well characteristics. This is the basis for design and in this respect, the procedure is standard.

Considerations in Design of Sub-Surface System

Of prime consideration in the design of a setting for an intermitter is the determination of the static fluid level or the bottom-hole pressure from which the fluid level may be calculated. This well characteristic is necessary for selecting the position of the intermitter valve, the accumulation chamber design and the method and means for unloading the fluid from the casing preparatory to beginning the intermitting cycle.

The next factor considered is the amount and pressure of the gas available. This gas, except in rare cases, is introduced into the producing well from an outside source and must be sufficient in quantity for continual operation, of great enough pressure to lift the length of fluid column produced during a cycle. Depending upon the amount of fluid, the average operating pressure in most intermitter wells ranges from 200 to 350 psi.

Another valuable determination is that of the well's productivity index. This term represents the relationship between producing sub-surface pressures and production rates. It is defined as the "barrels per day of gross liquid produced per pound per square inch of pressure" from a specified depth in the well. This productivity index indicates where the working fluid level of the well will remain as the desired production is obtained. Correlating this information with the bottom hole pressure figures, the chamber, valve setting and packer position may be determined.

For example, consider a well that produces 25 barrels of oil and 5 barrels of water daily, has a bottom-hole pressure (static) of 450 psi at the total depth of 3200 feet. The specific gravity of the oil was determined to be 0.85; that of the water as 1.05. From production tests, it was found that as 0.10 barrels of fluid were produced per day, the bottom-hole pressure dropped one pound per square inch. This is known as the productivity index.

In order to compute the static fluid column, it is necessary to determine the average fluid weight and this, as shown by the figures in the example, is done by averaging the specific gravities of the two liquids, and multiplying this figure by the weight of a column of water one foot high and covering one square inch of area. This latter figure (.434) is constant. Merely dividing the bottom-hole pressure by the weight of the fluid gives the height of the static fluid column.

The working fluid level is found by first determining the bottom-hole-pressure reduction resulting from the normal rate of fluid production; that is, multiply the productivity index by the amount of fluid produced per day. This is the pressure drop, which when subtracted from the static bottom-hole pressure, gives the working bottom-hole pressure. This figure, divided by the weight of the fluid, determines the operating fluid column.

The fluid-accumulation chamber must be designed to accommodate the dimensions of the hole primarily; the volume of fluid produced is of next consideration. For instance, the chamber, being the connecting link between the standing valve and the intermitter valve assemblies, must extend from the proper producing horizon (which is usually the well bottom) to a distance above the casing seat where the packer setting is made. It must be small enough to fit into the casing or liner on the bottom.

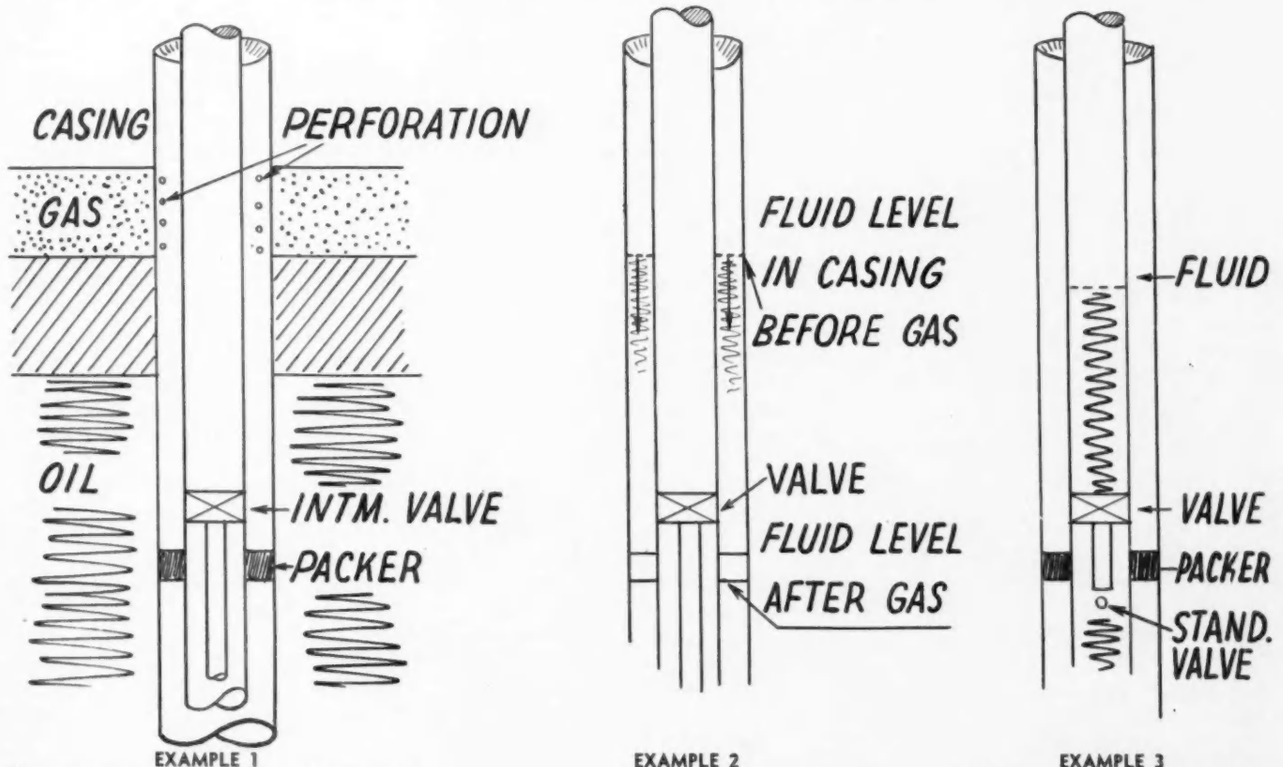
After accomodation dimensions are determined, the diameter of chamber

selected should be great enough to contain adequate fluid to meet the wells capable production, yet small enough that the elongated slug of fluid in the tubing can still be propelled by the operating gas pressure. For instance, the example well produces 30 barrels of fluid per day. This amounts to 1.25 barrels per hour. This amount can be produced at any interval or intervals within the hour—as regulated by the surface control on the intermitter unit. Say, it is desirable to produce (or intermit) this amount once every hour. From tables, 2-inch tubing contains 0.41 barrels per hundred feet; 2½-inch, 0.59; 3-inch, 0.91; and 4-inch, 1.57. In this case, 2½-inch chamber is satisfactory for dimensions and 220 feet is suitable for proper volume.

Another factor aiding in determination of proper chamber design and setting is the build-up curve, or the rate at which the fluid level will build up (after practical fluid exhaustion) when the well is shut in. An approximation of a typical build-up curve is shown. The curve begins at a point opposite the pressure which corresponds to the lowest fluid level that can be obtained by production of the well. For a short time, there will be a rapid build-up of the fluid level, as shown by the curve, until a point is reached where a marked change occurs and the rate of build-up decreases to a line asymptotical to a horizontal line representing the static fluid level. The optimum period of intermitting, therefore, is then represented by the time required for the fluid level to build up to the abrupt turning point of the curve. Assuming in this case, that the operating fluid pressure of 150 psi, is reached by the well after a shut-in period of one hour. The time-cycle control should be set to intermit the well once every hour for maximum production.

The gas energy available for lifting the desired amount of fluid should next be investigated. There are two phases of operation to be considered: how the unloading procedure will be carried out with the gas pressure available, and will the well "log up" during normal operation from lack of sufficient pressure of gas? The normal operation of the example well will lift a slug in the 2½-inch chamber of approximately 220 feet. When this slug reaches the 2-inch tubing it will elongate in proportion to the relative volumes of the two pipes, or $\frac{.59}{.41}$ x 220 feet. This makes the column in the 2-inch tubing stretch out to approximately 317 feet. The gas pressure required to balance this column would be equivalent to this figure multiplied by the fluid weight per square inch, or 317 times 0.38. The final figure of 105 psi is impractical but it shows that 200 psi is adequate for the normal operating gas pressure.

The problem of unloading the well fluid from the tubing-casing annulus (trapped there after the packer has been set) is of major proportions for prolific wells cased with large pipe. The difficulty here is that reducing the level of the fluid in the large casing annulus by a relatively small amount will result in a length of fluid column in the tubing that the maximum gas pressure available may not lift, thus logging up the well. In cases of this kind, where the fluid is unloaded through the tubing, the aid of unloading or auxiliary valves placed higher up in the tubing string, is resorted to. The settings for these unloading valves may vary with the type of valve used, but the general procedure for calculating the settings is dependent upon the pipe sizes and gas pressures available. Assuming the casing annulus in the example well has a fluid capacity of 2.94 barrels per 100 feet of length. Thus a displacement of 100 feet of fluid from this annulus would result in a column of $\frac{2.94}{.41}$ x 100 = 717 feet in the 2-inch tubing. This would require gas pressure greater than 717



EXAMPLE 1
Gas sand separated from oil section by rock formation.

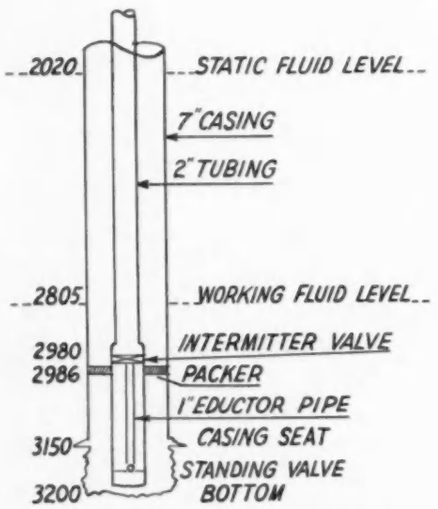
EXAMPLE 2
Packer omitted.

EXAMPLE 3
Fluid above intermitter, short eductor pipe.

Three unusual intermitter installations illustrating the flexibility of bottom-hole design. Example 1 shows how a separate gas sand is utilized as the source of lifting power. In Example 2, the fluid level is used instead of a packer to trap the gas in the casing annulus. This works only in the case of a highly productive, high-fluid-level well. Example 3 is an installation used for "skimming" the top of the fluid level. As fluid level recedes, valve can be lowered by adding tubing at surface.

times .38 or 272 psi to start this length of column moving. If a maximum gas pressure of 1000 psi were available for unloading the example well, unloading valves may be reqiured at intervals slightly in excess of 300 feet beginning at this distance below the static level and ending at approximately this distance above the intermitter valve. A margin of safety would be provided with this design.

Some types of intermitters and some unloading valves can, by reversing the gas flow, unload the fluid through the casing. This is feasible where the casing is of small enough diameter to prevent slippage of gas past the fluid column. Seven-inch casing or smaller is satisfactory for this type of unloading procedure. The advantage to this method of unloading is that for the same gas pressures, volumes of fluid can be displaced through the casing annulus that would stretch out into prohibitive length in the tubing. In other words, pressure (being in pounds per square inch) is independent of the fluid column area but is strictly dependent upon the column height.



Schematic drawing of sub-surface setting

Quite frequently the most satisfactory and economical method of unloading the well is by swabbing.

Unusual Installations

Besides low first cost and economy of operation (where high-pressure gas is plentiful and cheap), an outstanding advantage to intermitter use is its extreme flexibility and its ease of design to fit unusual or changing well conditions. As an illustration, consider the three cases shown in the schematic drawing. The first example involves a well that has a prolific gas sand above the producing zone. This gas section is completely isolated from the pay section by another formation between them. At the exact depth of the gas source, the casing has been perforated, allowing the gas to fill the casing-tubing annulus above the packer. This gas must be of sufficient pressure to maintain operation—not too great nor too little. Utilizing a gas source in this manner has the drawback of not being able to regulate the amount of pressure, as can be done when gas is introduced from an outside source on the surface.

The second case is that of a high-fluid-level well, wherein a packer is omitted and the fluid itself is used to prevent the gas from going around tubing bottom. As shown, the fluid stands at a certain level until gas pressure is introduced into the annulus. The level is then forced down to a predetermined position (depending upon fluid weight and gas pressure used) where the intermitter valve is clear. The use of this design entails a complete knowledge of the well's characteristics and involves careful calculation.

EXAMPLE:
DEPTH OF WELL 3200'
PROD. 25 OIL, 5 WATER
B.H.P. 450 P.S.I.
SPEC. GRAV. .85 OIL, 1.05 WATER
PROD. INDEX 0.10 BBLS/DAY/P.S.I.

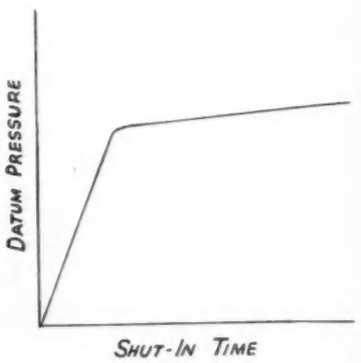
CALCULATIONS:
FLUID GRAVITY
$\frac{25 \times .85 + 5 \times 1.05}{30} = 0.88$
FLUID WEIGHT
$.88 \times .434 = .38$ P.S.I./FT.
STATIC FLUID COLUMN
$\frac{BHP}{Fluid\ Wt.} = \frac{450}{.38} = 1180'$
WORKING FLUID COLUMN
PROD. INDEX $\times 30$ = PRESS. DROP.
$0.10 \times 30 = 300$ P.S.I.
$450 - 300 = 150 \div .38 = 395'$

Another design of sub-surface equipment is shown in example 3. Here there is but a short piece of eductor pipe, or perhaps none at all. The standing and intermitter valves are separated by the packer only. This design can be used in high-fluid-level wells, where it is desired to produce higher up in the fluid. As the fluid level recedes, more tubing can be added at the top, thus lowering the intermitter valve to a favorable producing depth. One distinct advantage to this arrangement is the absence of pressure differential loss in the 1-inch eductor pipe.

Limitations

As no perfect equipment has yet been designed to operate without any trouble under any condition, likewise the intermitter has certain limitations which much be recognized and understood for best performance. A very common enemy to any type of producing device is paraffin. The use of gas in lifting fluid often accelerates the accumulation of paraffin on the tubing walls at certain depths in the well due to the cooling effect of the expanding gas approaching the surface. In all cases this condition can be remedied by regular scraping or washing with a solvent.

Corrosion and hydrogen sulphide often detrimentally affect intermitters, especially those requiring the use of wire lines. In the past this was solved by using monel lines, or wires of similar resisting properties. As most valves are constructed of high alloy steels, the main problem has been in the protection of the connecting link between surface control and intermitter valve. Those operating by pressure control have been least affected by corrosive action.



Typical build-up curve

The unloading system of certain intermitters is not designed for operation in wells with high fluid levels. Where various manufacturer's equipment is used in conjunction in the process of unloading the well, satisfactory results are not always obtained. Such equipment will operate perfectly under fluid conditions for which it was designed. There are intermitters with proper valves for the unloading procedure.

The problems above may vary with the types of intermitters; the problem of high gas-oil ratios for wells producing very small quantities of fluid will be prevalent regardless of intermitter brand. As the well fluid drops off to 10 or less barrels per day, inevitably the input gas-fluid ratios will be excessive. This, however, is no problem where gas is available at a minimum cost.

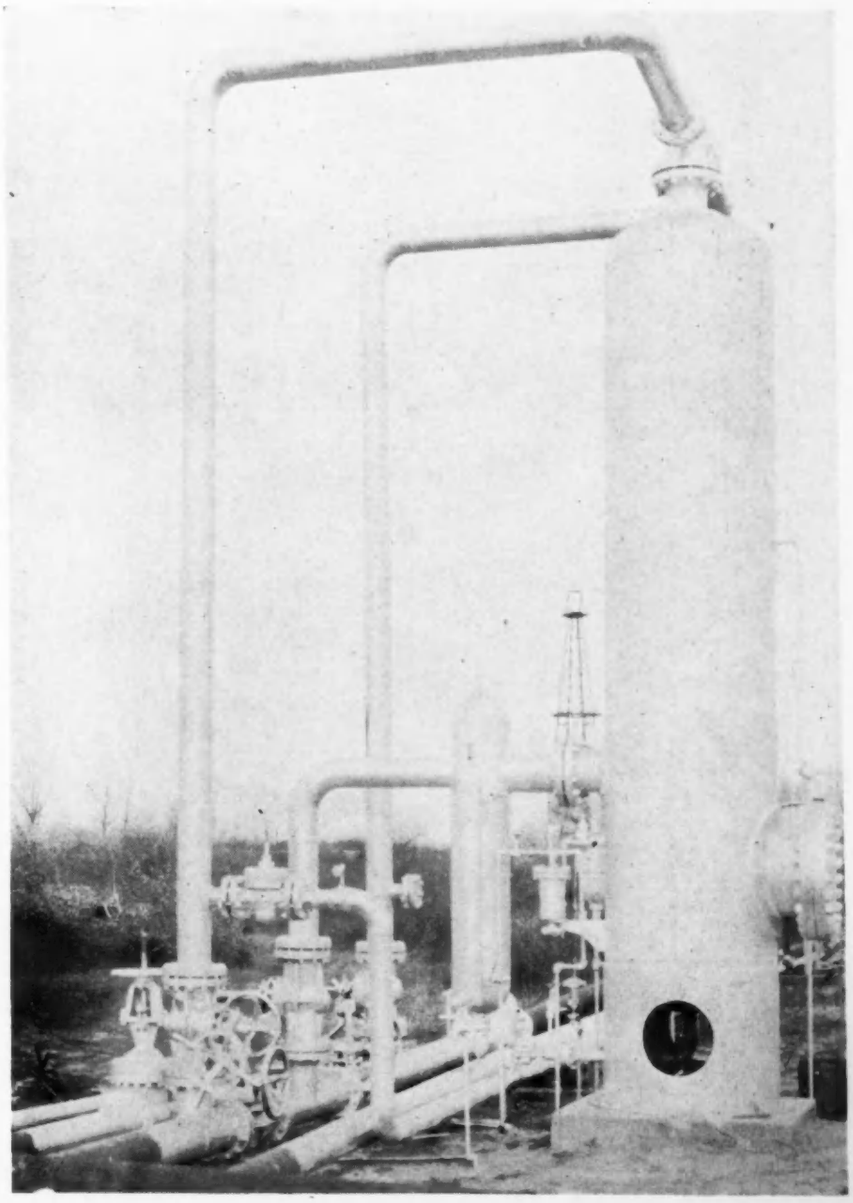
Gas Stripped of Water Vapor By Contacting with Brine

Automatic unit recirculates concentrated brine which absorbs the moisture in the gas, the required density of the solution being maintained by simple evaporator

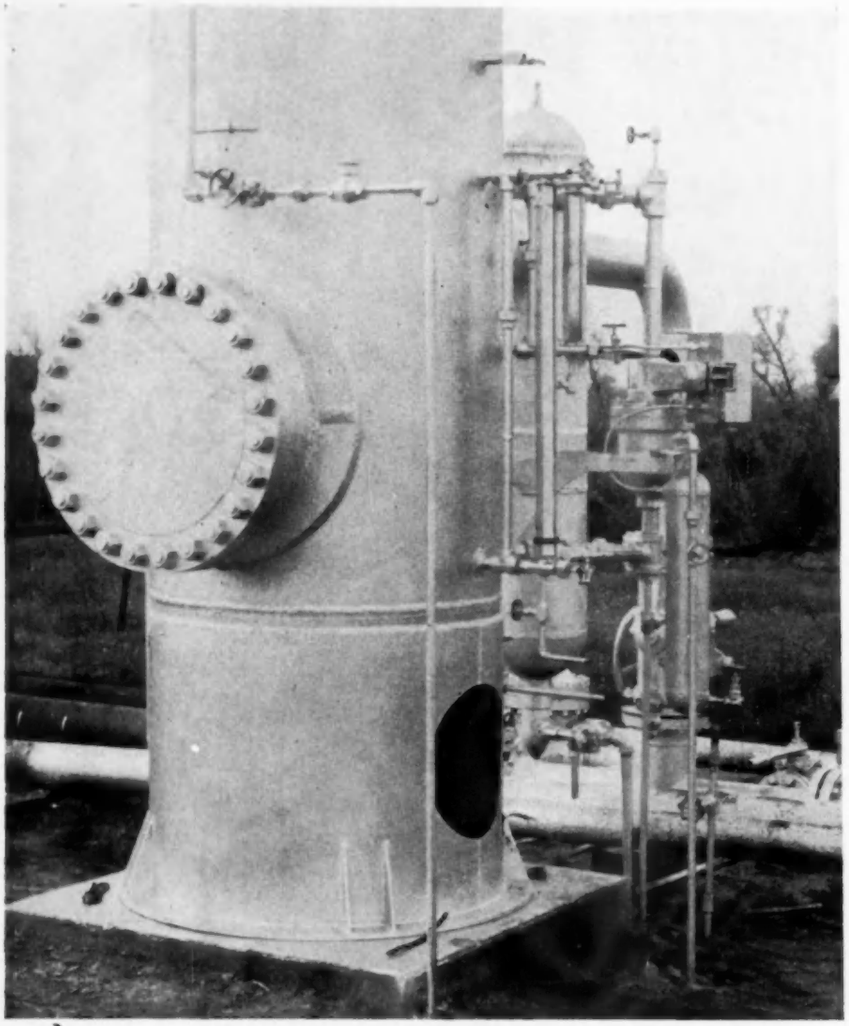
REMOVAL of small quantities of water vapor from natural gas immediately after production to prevent subsequent condensation and collecting in pipe lines can be accomplished with a continuous recirculation of brine of the required concentration for the gas being treated. In an installation of this nature, one company uses a vertical vessel located at or near the field gathering system, preferably at the junction with the main transmission system. It is equipped with a manifold for routing the gas through various channels, having gear- and sector-operated plug valves at the control points where switching is most frequently done. Between the main gathering system header and the gas inlet of the stripper is placed a fluid collector which has an automatic dump trap, similar in construction to a unit employed for draining condensate from steam lines, which evacuates fluid as rapidly as it accumulates in the collector leg.

The stripper is mounted on a short skirt permanently attached to the shell which rests on a concrete foundation. At one side of the stripper, near the lower bend line, is a large flanged manway for inside inspection and cleaning. The stripper vessel is all-welded construction with 7/8-inch flange steel for a working pressure of 500 pounds. The gas inlet from the external fluid collector is approximately one fifth of the distance from the base to the top, using a welding neck and companion flange for bolting the pipe connections. The stripper has adequate internal apparatus for contacting the brine with the gas for extraction of water vapor. The brine inlet connection is made with the stripper slightly above the vertical center line, using half-inch pipe.

The adsorbing brine, for the greater part, is contained in a series of connecting vessels and apparatus for reducing the diluted solution with heat, and covered tanks from which the circulating pump takes suction. Since the stripper is operated at a comparatively high pressure, the dilute brine solution is



Vapor stripper used with a concentrated brine to prepare the gas for transmission lines.

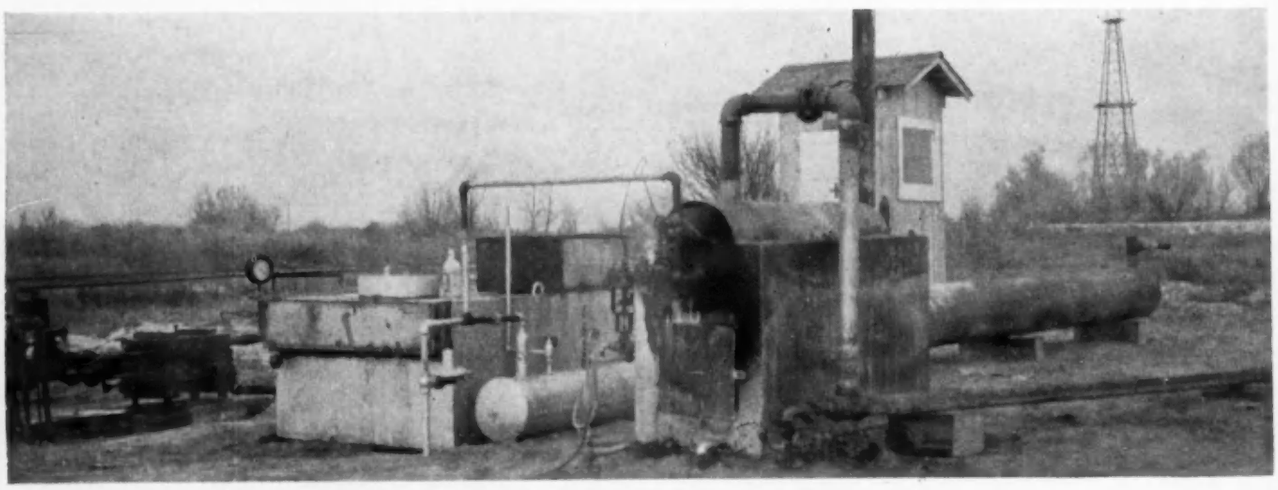


Lower section of stripper vessel

strapped from the base of the vessel with a liquid-level controller and remote control outlet valves from which it flows directly to the gas-fired concentrator. This unit is a horizontal drum mounted on a fire-box structure where gas is used as fuel. A thermostatic-controlled mixing valve is set in the fuel line, down stream from a small pressure reducer to obtain fuel pressure for efficient combustion under controlled conditions. The evaporator is operated at atmospheric pressure, equipped with a vent line to release water vapor to the air, conveying the vapor and condensate to a convenient distance from the setting. To evacuate condensate which may settle in the vapor line, a connection is made for high-pressure gas to blow water to the point of disposal.

Under continuous operation, the brine flows from the evaporator to a rectangular steel tank equipped with a dust-proof cover which has a large slip-fit-covered inspection manway. At one end of this tank is a small, covered cubicle for placing test tubes and apparatus for determining the density of the solution. A duplex steam pump, equipped with a special outside packed plunger type fluid end takes suction on the concentrated brine at the covered tank and delivers it to the vertical stripper at the junction of the field gathering system header and the main transmission line. Since a certain amount of fuel is required for operating power units on the property where the gas is produced, it is necessary to reduce the pressure, and the circulating pump is used in part for this purpose. Gas from the high-pressure line is directed to the steam end of the pump and power is obtained from the gas without waste.

The unit is self-sufficient, and entirely automatic so far as routine operation is concerned, and when the required quantity of concentrated brine is placed in the circulation system, the density of the solution is maintained by a pre-set temperature on the evaporator. Frequent tests with a hydrometer and other test apparatus to obtain data on the concentration of the brine enables the operator to make necessary adjustments of the temperature in the evaporator so that variation of concentration is negligible.



Brine conditioning unit, gas fired and operated at atmospheric pressure

Calculation of Actual and Effective Counterbalance

PART 2

Some conditions require the making of exact analysis for counterbalancing purposes. This article tells how such analyses can be made

By EMORY N. KEMLER
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THE previous article (THE OIL WEEKLY, February 8, 1943) considered an approximate analysis of counterbalance requirements considering the motion of the pitman as simple harmonic and neglecting the angularity of the pitman in determining load positions. For many conditions such an analysis will be sufficiently accurate. For other cases a more exact analysis may be necessary. The following discussion goes into more detail and points out how many other things can be determined from a more exact analysis.

Velocities in Pumping Mechanism

As was previously indicated, the analytical determination of the amount of counterbalance can be approached from the standpoint of power, torque or forces. A force analysis will be discussed very briefly in the next article and is not recommended for general studies because it gets involved in much detailed layout work. Since most pumping equipment runs at a reasonably uniform speed, a power and torque analysis are usually equivalent, since the instantaneous power is the product of torque and angular velocity. The instantaneous power can also be determined by multiplying the instantaneous force by the instantaneous velocity. Since the velocities in any pumping unit are proportional to the speed, this method has the advantage that a velocity diagram can be drawn for one speed of the machine and the values for any other speed determined by multiplying by the ratio of angular velocities or speeds. One layout will then serve to work for all equipment of that design, regardless of the speed at which the equipment operates.

The velocity in a pumping unit or rig front can easily be obtained by vector methods. The general method as given here can be found in several textbooks on mechanics of machinery and will not be described in detail. Only the detailed step-by-step instructions necessary to obtain a solution will be given here.

The following rules show how these velocities can easiest be obtained:

1. Layout to scale the skeleton outline of a pumping unit as shown in the left-hand side of Figure 1. (For simplicity a symmetrical unit has been assumed).

2. Locate the points for which the velocities are desired. Then mark the position of these various points. Letters A and B represent the points to be con-

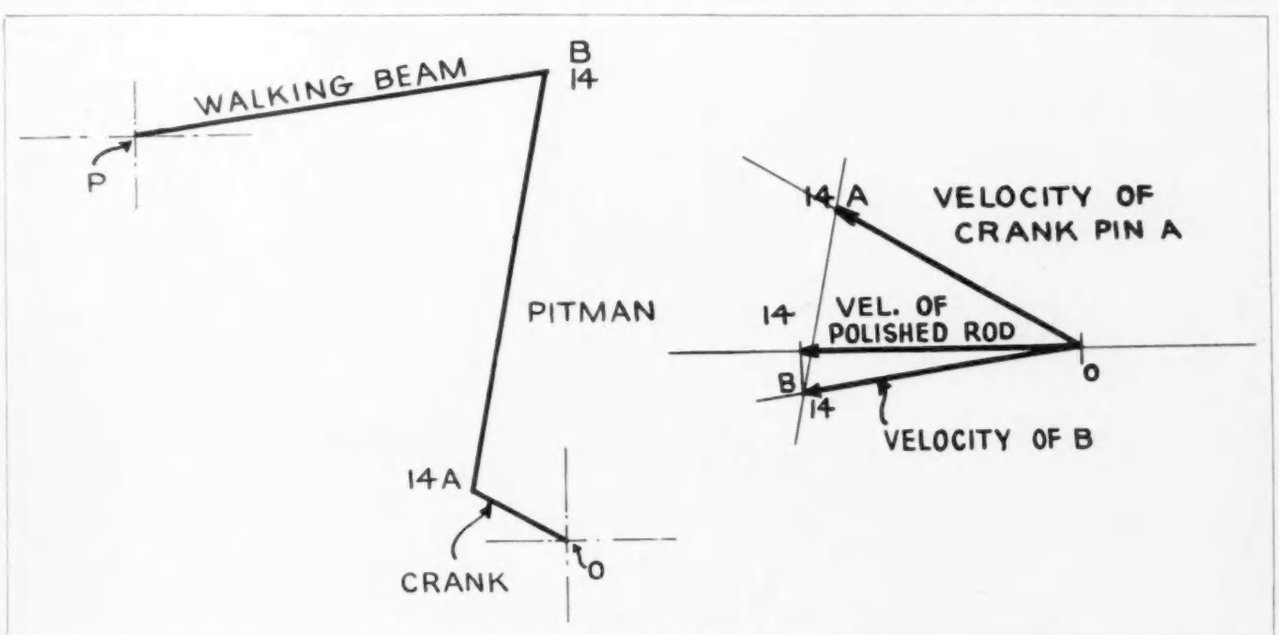


FIGURE 1

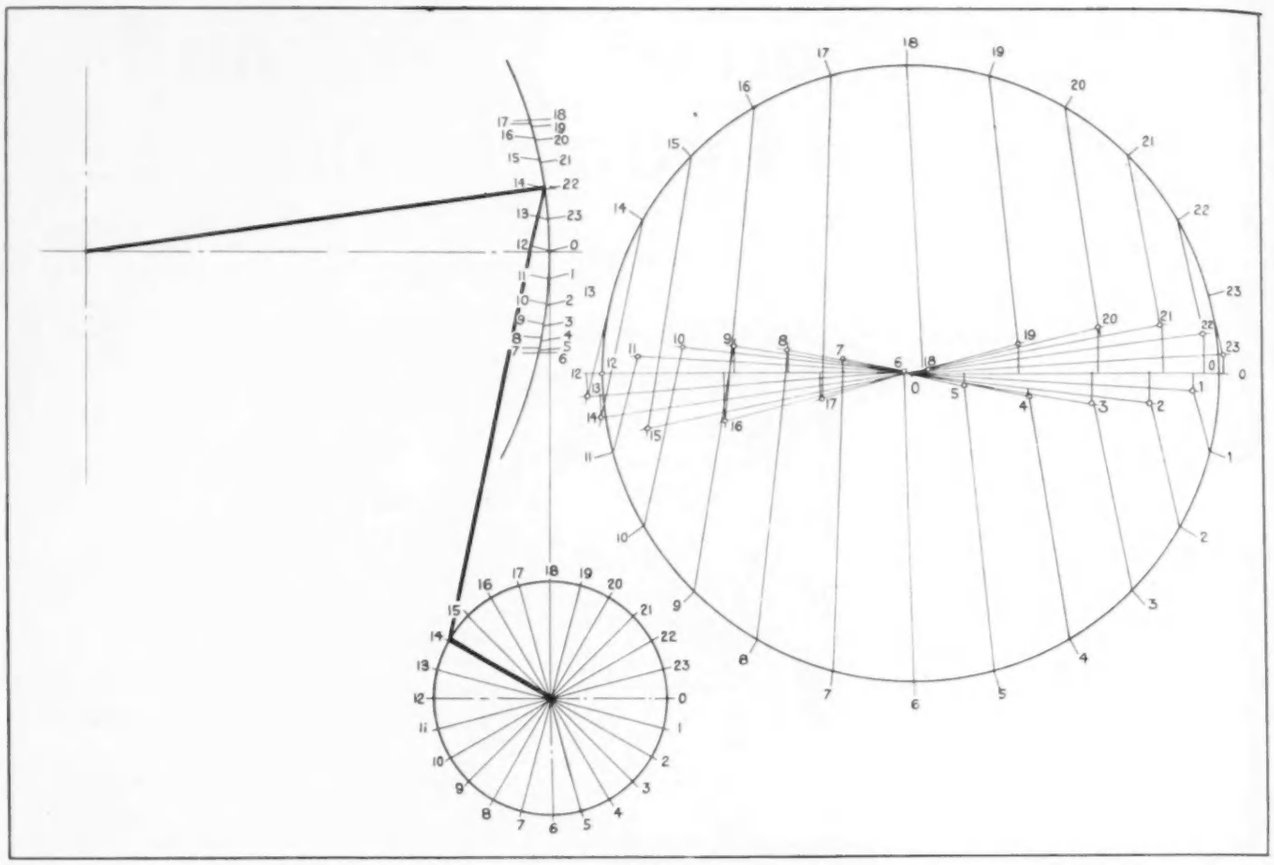


FIGURE 2

sidered. The significance of the 14 will be indicated later.

3. Calculate the velocity of the crank pin A from the relation

$$V = 2\ N \frac{R}{12}$$

V = velocity in ft/min.
N = Rev. per min. of crank
R = crank radius in inches

4. Lay out this velocity in the direction of the crank on a separate diagram as shown in the right-hand side of Figure 1. (Line from O to point A on right-hand diagram).

5. Draw lines paralle' to pitman and walking beam as indicated. That is, draw line through point A on velocity diagram parallel to AB on space diagram. From O draw line parallel to PB through O. Where this intersects line parallel to AB, locates the point B. The velocity of point B is equal to the length of the line OB multiplied by the scale to which velocity of A was drawn. The resulting vectors from point O, to any point on the diagram represents to the same scale as the crank velocity, the velocity of any desired point. This velocity will be 90° from its correct direction.

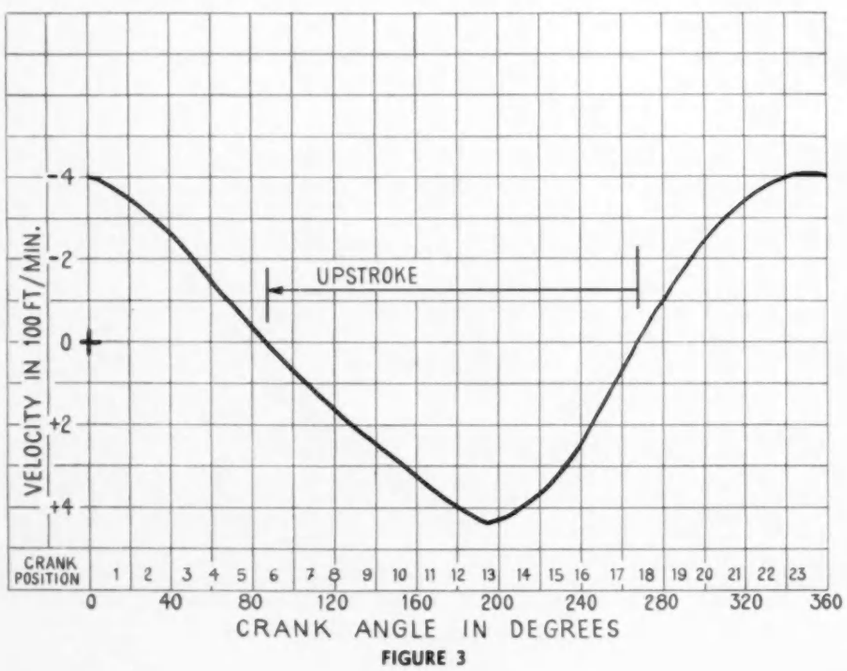


FIGURE 3

6. The vertical velocity of the pitman, if the beam has equal arms, will be vertical component of the velocity of point B or will be the horizontal projection of point B on the diameter through O, since all velocities are 90° from their true position. This projection is shown on the diagrams. The distance from the point O to the project point will be the vertical velocity of the polished rod.

7. This procedure can be extended for each position. All positions of one machine can be placed on one diagram as shown in Figure 2. Fifteen-degree positions are indicated and normally used since they are sufficiently close for most purposes and can be conveniently laid out with a 45° and 30-60° triangle. When several positions are used the velocity of the crank can be laid out by drawing a circle through point 14.

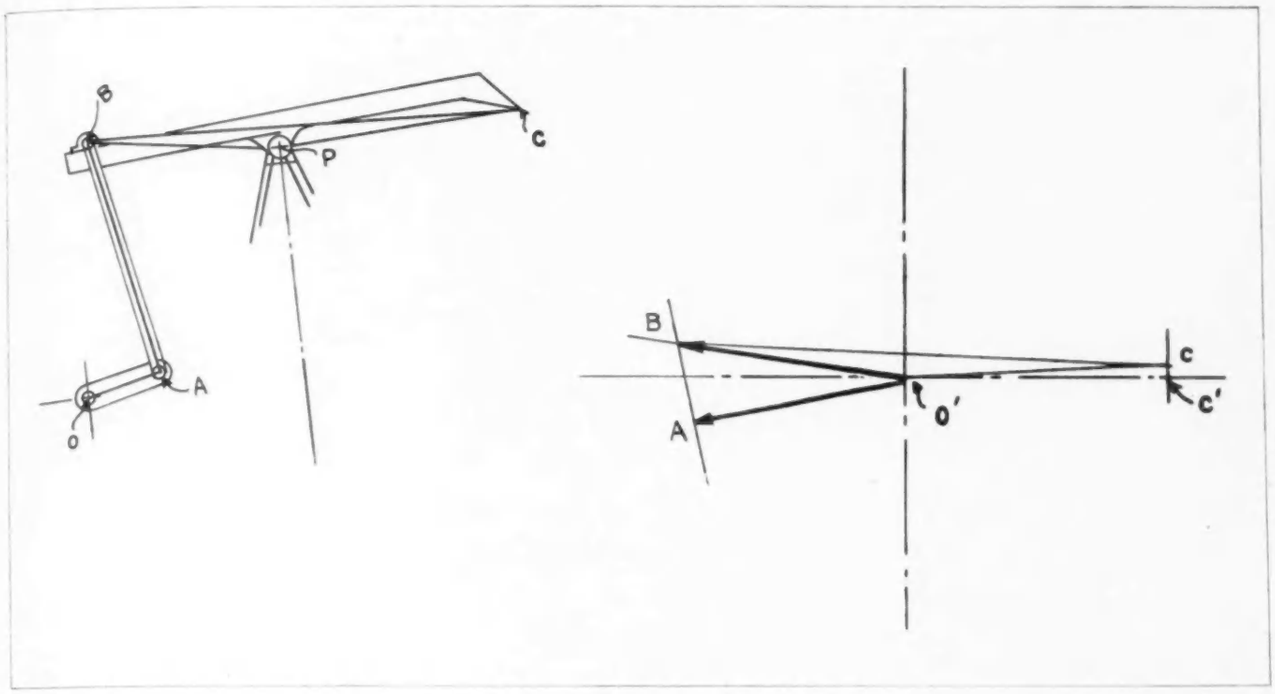


FIGURE 4

Position 14 in Figure 2 is identical with position marked 14 in Figure 1.

8. A polished - rod - velocity diagram for various crank positions can be drawn as shown in Figure 3 by scaling of the desired values from Figure 2. Since the polished rod moves in a vertical direction, it is necessary to consider the vertical component of the velocity of point B. These are the values shown in Figure 3.

9. If the beam is symmetrical and pivoted at the center, the velocity of the hanger bearing on the beam will be the same as point B except for direction. For any other arrangement a more complicated diagram will result.

10. In the general case where the beam is not supported at the center, the diagram can be completed by drawing the entire beam on the velocity diagram using the distance OB on the space diagram proportional to the distance OB on the velocity diagram to find the velocity of any other point on the beam. The other points on the beam can also be drawn parallel to their positions on the space diagram.

Figure 4 shows a pumping unit in a general position with unsymmetrical beam and setting. The analysis considers only points A, B, and C. Since points O and P are fixed points on the space diagram and have zero velocity, they will be at the same point O on the velocity diagram. The velocities of points A and B are laid out as indicated previously by drawing lines parallel to OA, AB and PB giving triangle OAB. The velocity of point C on the end of the walking beam, or more correctly the point from which the polished rod is supported will be drawn parallel to PC. Its magnitude can be found by writing; velocity of point C/velocity of point $B = \frac{PC}{PB}$. If desired a line through B parallel to BC will also locate point C on the velocity diagram. If the triangle PBC on the space diagram is not too flat, this method will be satisfactory. If it is flat, small errors in drawing the lines may result in large errors in velocities.

When actually laying out such a pumping mechanism and its velocity diagram, it will be seen that the peak polished-rod velocity will be greater than the crank velocity and occurs at a position different than the middle of the up and down strokes. Because of the angularity of the pitman, the position of the polished rod at symmetrical crank positions will not be equal. Both

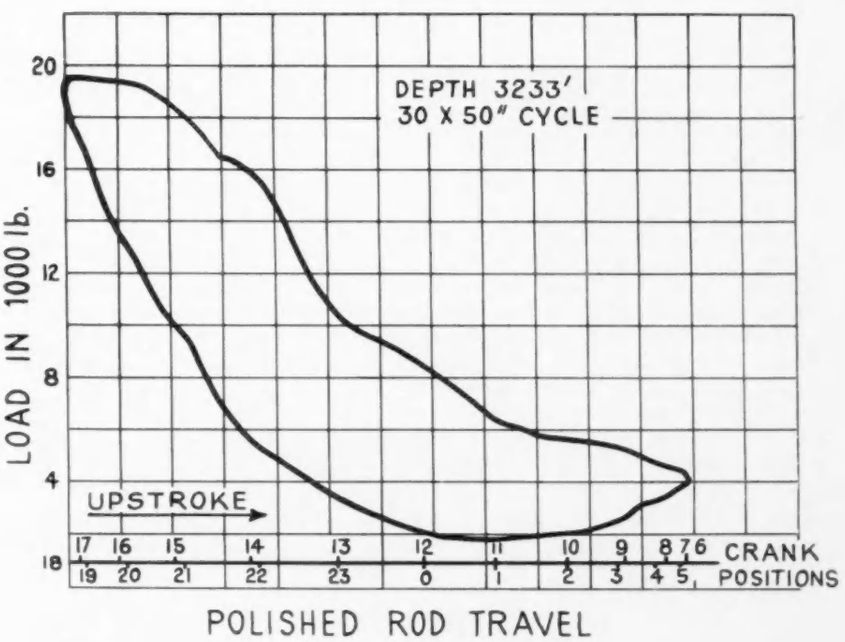


FIGURE 5

TABLE 1

CRANK POSITION	Well Load	Polished Rod Velocity	Inst. H.P. No. C'Bal.	Effective Load with 10,600 Lbs. C'Bal.	Inst. H.P. 10,600 Lb. C'Bal.	Inst. H.P. 9,600 Lb. C'Bal.	Inst. Torque with 9,600 Lb. C'Bal.
1	1,700	−362	− 18.7	−8,900	+ 98	+88	185,000
2	2,000	−305	− 18.5	−8,600	+ 79.5	+70.2	147,000
3	2,400	−230	− 16.7	−8,200	+ 57	+50	105,000
4	3,200	−150	− 14.5	−7,400	+ 33.4	+28.9	60,700
5	3,600	− 66	− 7.2	−7,000	+ 14	+12	25,200
6	4,000	10	+ 1.2	−6,600	− 2	− 1.7	3,500
7	4,300	90	+ 11.7	−6,500	− 17.2	−14.5	30,500
8	4,500	160	+ 21.8	−6,100	− 29.5	−24.6	51,600
9	5,200	230	+ 36.2	−5,400	− 38.7	−31.7	66,500
10	5,600	298	+ 50.5	−5,000	− 45.2	−36.2	76,000
11	6,300	350	+ 66.7	−4,300	− 45.7	−35.1	73,700
12	8,200	400	+ 99.5	−2,400	− 29.2	−17.1	36,000
13	10,000	420	+127	− 600	− 7.6	+ 5.1	10,500
14	16,300	402	+197	+5,700	+ 69.5	+81.7	172,000
15	18,400	343	+191	+7,800	+ 82.5	+92.9	195,000
16	19,400	243	+142	+8,800	+ 64.8	+72.2	152,000
17	19,600	+116	+ 69.0	+9,000	+ 31.6	+35.1	74,000
18	19,200	− 15	− 8.7	+8,600	− 3.8	− 4.2	8,800
19	16,800	−138	− 70.5	+6,200	− 25.8	−29.9	63,000
20	11,200	−240	− 81.5	+6,000	+ 4.4	−11.7	24,600
21	9,600	−320	− 93.0	−1,000	+ 9.7	0	0
22	4,600	−377	− 52.5	−6,000	+ 68.5	+56	108,000
23	3,400	−403	− 41.6	−7,200	+ 88.0	+76	160,000
0	2,000	−400	− 24.2	−8,600	+104	+92	193,000

of these factors will affect the torque or horsepower calculations.

Torque and Horsepower Calculations Using Velocities

Figure 5 shows a dynamometer card taken on a relatively high speed well. This card has been selected for a detailed analysis using the velocities as determined above because it represents an extreme condition. The instantaneous horsepower required to pump a well can be determined from the relation

$$\text{Horsepower} = \frac{\text{Instantaneous velocity} \times \text{instaneous load}}{33{,}000}$$

$$HP = \frac{V\,(W_r - W_e)}{33{,}000}$$

where V = polished rod velocity in ft/min.
W_r = load in sucker rods
W_e = effective counterbalance weight at polished rod

The torque can be calculated for the equation

$$HP = \frac{2\pi N T}{33{,}000 \times 12}$$

where N = RPM of shaft
T = torque on shaft in inch-pounds

$$\text{or } T = \frac{HP \times 33{,}000 \times 12}{2\pi N} = 63{,}000\frac{HP}{N}$$

The method of applying this method can best be illustrated by working an example. The dynamometer card shown in Figure 5 and the velocity curve as given in Figure 3 will be used for the example. The position of the polished rod for various crank positions will have to be determined from the diagram as shown on the left-hand side of Figure 2. In this example it has been taken as the projection of the point B of the left-hand side of Figure 2 on the vertical line representing the line of motion of the polished rod. These values have been determined and laid out on the lower scale of Figure 5 marked crank positions. The crank positions and velocities to be used will depend on the direction of rotation of the crank. This will be particularly true if the crank center is offset from the center line of the pitman travel. The velocity diagram (Figure 3) shows that the velocity of the polished rod is not the same on the up and downstrokes and is not the same for the first and last half of the up and down strokes. This deviation from simple harmonic motion may make a considerable difference in the results on a card of the type being analyzed.

The easiest method of working such problems is to tabulate the data as indicated in Table 1. The first column lists crank positions corresponding to Figure 2. The second column lists the polished-rod loads as determined from Figure 5 for the various polished-rod positions which in turn were determined from Figure 2. The third column lists the polished-rod velocity as given in Figure 3. It was originally obtained from Figure 2 with proper modification of scale. The value of the instantaneous horsepower without counterbalance as given in column 4 was obtained using the formula

$$HP = \frac{W_r V}{33{,}000}$$

Figure 6 shows a plot of the instan-

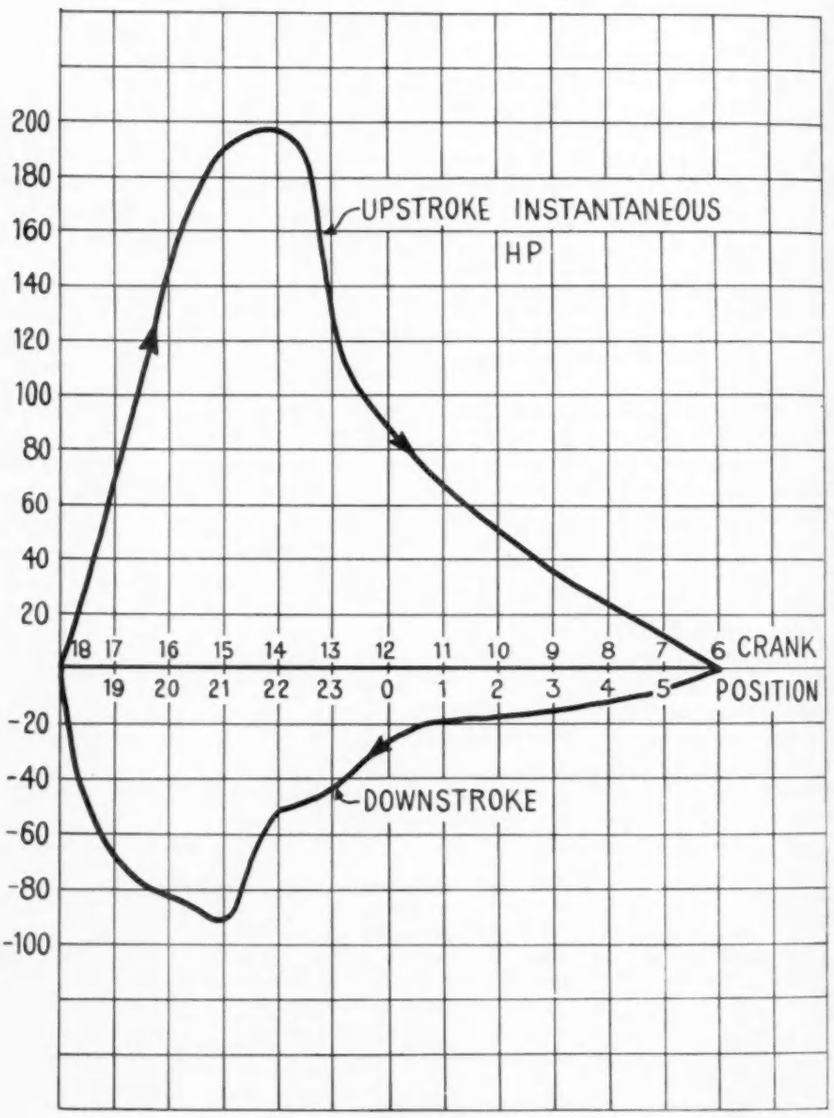


FIGURE 6

6 SUGGESTIONS FOR QUICKER COLD WEATHER ENGINE STARTING

THE PROPER BASIC CONDITIONS FOR EASIER ENGINE STARTING

A hot spark, properly timed... Impulse coupling operative through cranking speed range... Mixing valve correctly adjusted... Proper gas pressure... Good compression.

Check Your Engine Weekly at These Six Points

1. Ignition System: Impulse coupling on magneto should function correctly and not disengage at too low engine speed; otherwise engine will stop after it fires a few times. If not in order, replace magneto with a spare and have impulse coupling cleaned, or replaced as required.

Check breaker points on magneto. Clean, adjust or replace as necessary ... See that magneto is in good condition in other respects. If not, replace with a spare, permitting repairs to be made on magneto ... See that spark plug cables and terminals are in good condition—renew if in doubt.

2. See that there is an efficient gas pressure regulator and volume tank. Check gas pressure in volume tank, which usually should be 1½ to 2 ounces (3 to 4 inches of water.

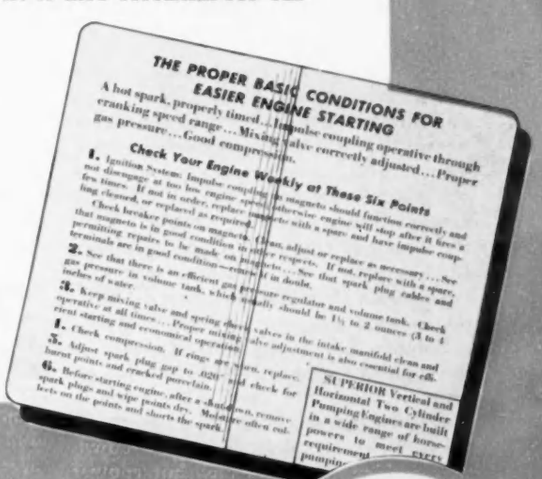
3. Keep mixing valve and spring check valves in the intake manifold clean and operative at all times ... Proper mixing valve adjustment is also essential for efficient starting and economical operation.

4. Check compression. If rings are worn, replace.

5. Adjust spark plug gap to .020″ and check for burnt points and cracked porcelain.

6. Before starting engine, after a shut-down, remove spark plugs and wipe points dry. Moisture often collects on the points and shorts the spark.

These salient points together with adjustment diagrams have been printed in a handy vest pocket reference folder form. They are available in quantities to fulfill your organization's requirements, by writing to the Sales Department, The National Supply Company, Toledo, Ohio.


THE PROPER BASIC CONDITIONS FOR EASIER ENGINE STARTING
Check Your Engine Weekly at These Six Points
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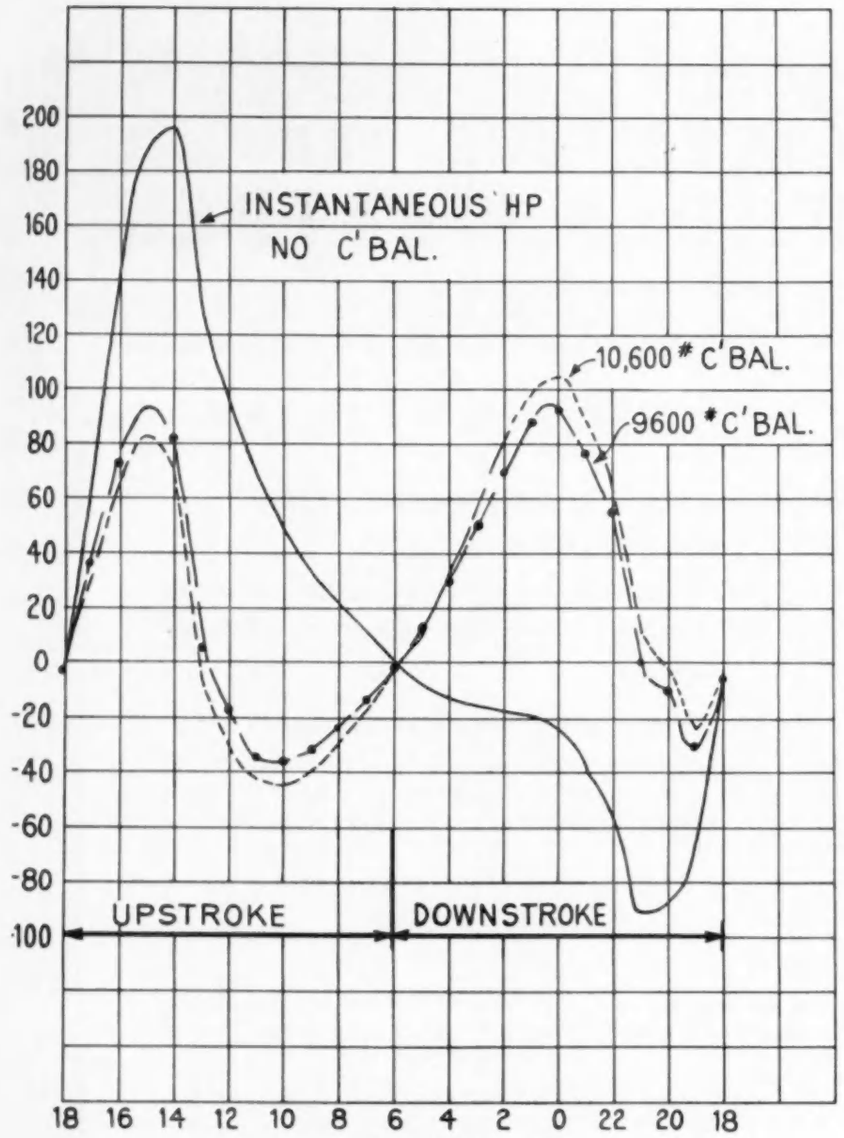

FIGURE 7

taneous polished-rod horsepower without counterbalance. This plot is made against crank position and conforms generally with the dynamometer card. The largest instantaneous value without counterbalance is almost 200. The average horsepower as obtained from the dynamometer card is approximately 22. The peak if no counterbalance were used would therefore be about 10 times the average.

Column 5 lists the effective load at the polished rod if 10,600 pounds of counterbalance are used. This value of counterbalance is ½ the sum of maximum upstroke and minimum downstroke. The instantaneous horsepower for the case where 10,600 pounds of effective counterbalance is used is listed in column 6 and can be determined for the relation

$$HP = \frac{(W_r - W_c)\,V}{33{,}000}$$

The value given in column 5 is $W_r - W_c$. The horsepower for this amount of counterbalance is plotted in Figure 7. The well would be overbalanced with this amount of effective counterbalance since the down-stroke peak is higher than the up-stroke peak.

Column 7 of the table lists the instantaneous horsepower when 9600 pounds of effective counterbalance are used. With this amount of counterbalance the peaks are equal. The up-stroke and down-stroke horsepowers are not equal as can be seen by an inspection of the area under the up-stroke and down-stroke curves. The negative area under part of the up-stroke curve reduces the net up-stroke power input. In this case the peak horsepower and, therefore, torque will be equal and a minimum. The average of up- and down-stroke horsepowers will not be equal and would be indicated by an unevenness in operation of the engine.

Even when counterbalanced for equal torques, the peak horsepower requirements will be over 4 times the average value. These peaks will result in speed fluctuations in the engine unless some means be provided for furnishing the peak requirements and storing energy when it is not required. Flywheels on the engine normally furnish this reservoir for energy.

Column 8 of Table 1 lists the torque on the low-speed shaft which is making 30 revolutions per minute for the case of 9600 pounds of effective counterbalance. The torque has been calculated from the formula

$$T = 63{,}000\,\frac{HP}{30}$$

The shape of the torque curve will be identical with the horsepower curve. The horsepower curve can be used as a torque curve if a suitable scale can be supplied alongside the horsepower scale.

This example shows that cards of usual shape are not as simply analyzed as the more conventional type of dynamometer card. Any of the field methods of counterbalancing which involve balancing of up- and down-stroke power or speeds would indicate a smaller amount of counterbalance than 9600 pounds and would result in a higher peak torque on the system. There are so many factors to consider in such an analysis such as speeds, geometry of the pumping mechanism, and shape of the dynamometer card that only the general method of attack can be given. Each case should be given an individual analysis. The next article will point out some further factors which must be taken into account in a general analysis of counterbalancing.

Editorial Index to 1942 Issues Available Upon Request

Due to the paper shortage, THE OIL WEEKLY is deviating from its long-standing previous custom of incorporating its Annual Editorial Index in one of its regular issues mailed to all subscribers. The complete editorial index covering all issues of THE OIL WEEKLY published during 1942, bound separately in convenient pamphlet form, will be sent without charge to each subscriber requesting a copy.

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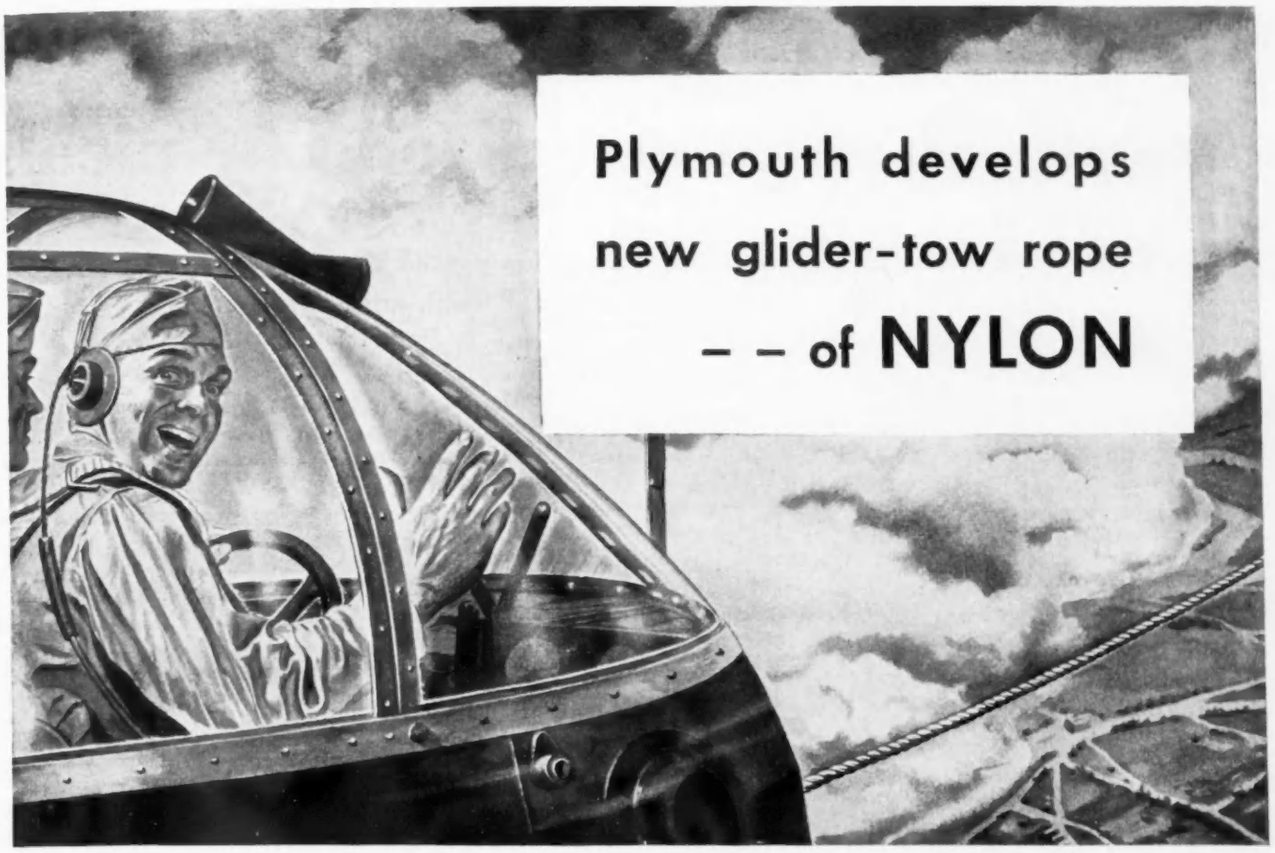

Out of the war comes this amazing new kind of rope.

A rope so much stronger and more resilient than any rope ever before made, that its possibilities have only been scratched.

Here's how it happened: For a century Plymouth Ship Brand Manila had been the world's standard. Along came ponderous gliders, to be accelerated at terrific speeds. Something new in rope ratios of strength and elasticity had to be developed.

Plymouth engineers, working with DuPont and the Army Air Force, found the answer in NYLON ROPE.

It so far surpasses other ropes for the purpose that today every pound of Nylon Rope now being produced is used for military operations—including air pickup work and glider-towing.

When the clock strikes "post-war," Plymouth Nylon Rope will be ready, not to replace Ship Brand Manila, but to *take on new jobs that need its amazing characteristics.*

Meanwhile, every effort is being made at Plymouth to ease the Manila Rope situation. Nylon Rope is just one of the many new developments. Watch for further announcements.

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PLYMOUTH

THE *Rope* YOU CAN TRUST

Rotatable Mixing Jets in Mud Tank Assure Thoroughly Mixed Chemicals

Perforated pipe, adjustable to angle within packed off ends, permits accurate direction of high-pressure streams through entire batch of mud

DEEP drilling requires that mud be held to extremely close tolerances as regards consistency, weight and other characteristics, and it was to insure that these characteristics could be closely controlled and the mud be evenly mixed, that one large company operating in a deep California field provided a mixing jet system in the bottom of each of the large portable steel mud tanks. By jetting mud or water at high pressure into the bottom of the mud, settling-out is prevented, and a thorough mixing is assured whenever new ingredients are added.

A length of 3-inch pipe, laid along the full length of the tank near the one side, was perforated with a series of small holes spaced at approximately 12-inch intervals. Over each hole was welded a short nozzle of ½-inch pipe. Mounted several inches above the bottom of the tank, the pipe is held in place by several iron clamps, but the clamps are not cinched up tightly and the pipe is free to be turned, by means of a handle located outside the tank, through an arc of about 90 degrees. One end of this pipe enters the tank through a water-tight packing gland, and a short steel handle welded to the exposed section of the pipe permits it to be rotated.

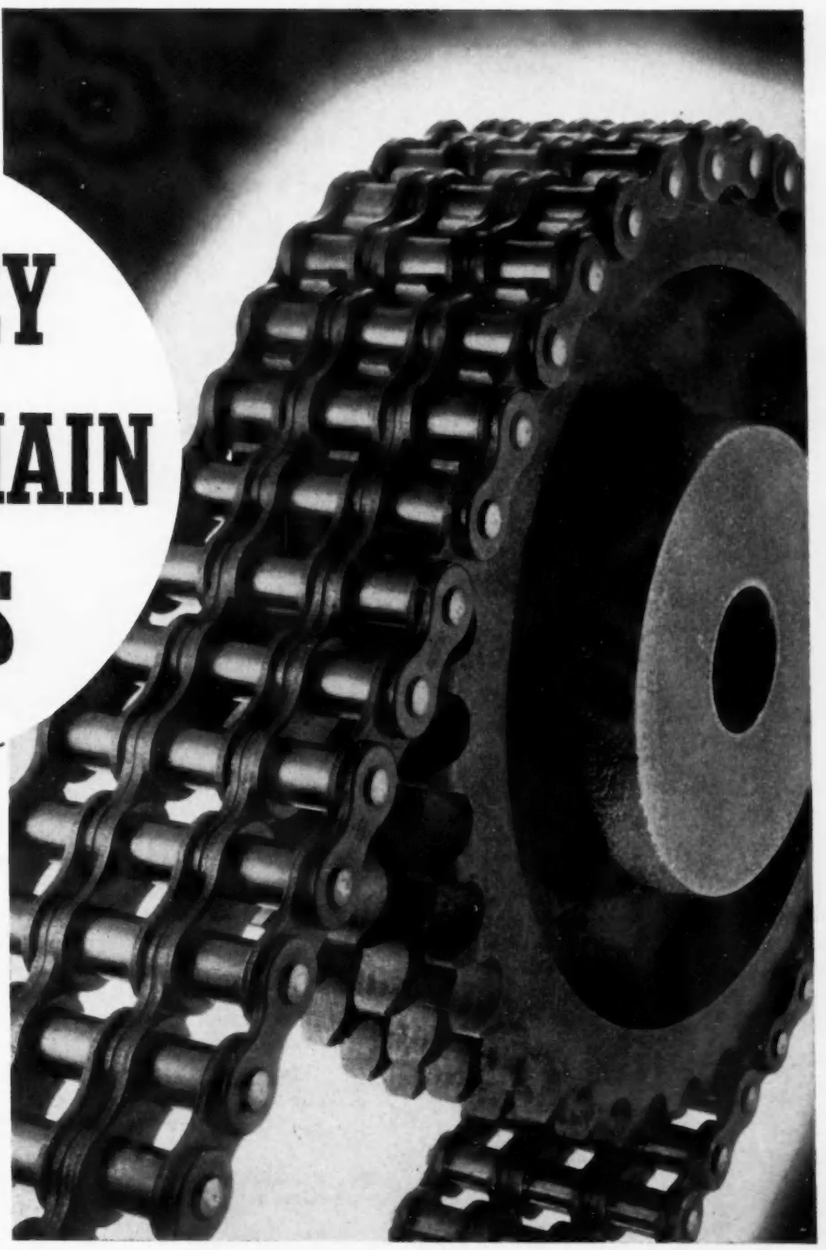
Each of two interconnected steel tanks are provided with one of these jet mixers. Since the mud suction intake is in the bottom of the tank, the position of these mixing jets assures a better and more consistently mixed mud at the point from which it is withdrawn. When water or chemical is to be added to the mud, its injection from the bottom of the tank will assure a more complete and even mixture.

Shown across the back of this mud vat, and supported on brackets so as to clear the floor, this pipe with its multiple nozzles may be shifted manually so as to sweep the bottom, give horizontal flow of the jets, or simply stir the surface of the material in the vat.

Give all Your Oilfield Equipment

the Performance-Protection of

WHITNEY ROLLER CHAIN DRIVES



Oil is ammunition . . . and to produce it uninterruptedly, *you* have to get out of your equipment every ounce of the performance that the makers built into it. So keep oil flowing out *by keeping power flowing in* on Whitney Roller Chains. These performance-protecting drives are designed to buck the toughest operating conditions 24 hours a day, with shocks and overloads thrown in. And what's more, Whitney stock chains and engineering assistance are always available on short notice. All of which makes it a sound wartime measure for *you* . . . on all the equipment in your operations . . . to make Whitney Chains your Drive for Victory.

★ ★

PROLONG CHAIN LIFE

Have sprockets properly aligned, chains properly lubricated, drives frequently inspected . . . to keep 'em rolling *longer.*

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THE WHITNEY CHAIN & MANUFACTURING CO., HARTFORD, CONN.

Formula for Packing Ring Length

WHERE a mandrel of the proper diameter is not available for cutting rings from coil packing, much material can be lost, rods scored, or blow-by apertures left, through cut-and-try attempts to get the proper length. Obviously, if the circumference of the rod or plunger being packed be taken as length to be used, the packing will be too short, with a wide V extending out to the circumference of the box or gland. Conversely, if the gland circumference be used, the strip will be too long when forced into place, and the packing will be too tight for proper lubrication.

On packings of the standard braided and self-lubricated types, as on the spirally-wound metallic strip type on reciprocating service and for rotating packings in which the line speed (speed of a given spot on the rod past a fixed point in the packing) does not exceed 1250 feet per minute, an empirical formula may be used which has given satisfactory results over a wide range of service in handling boiler-feed water, brine and oil.

The formula requires the knowledge of rod or plunger diameter, width of gland or box, and proper packing thickness, all of which information is available from factory specifications on the pump, or may be experimentally determined at the first shut-down. Then, using the values derived in place of the symbols shown under the sketch, a satisfactory length may be measured off on the packing, unrolled and lying flat, which when bent to the box circle, will give adequate closure without undue pressure or crowding.

On shafts and plungers not over 4 inches in diameter, the formula is

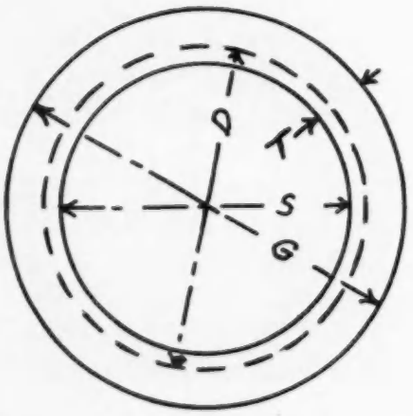
$$L = \pi\left(S + \frac{2T}{3}\right)$$

while for larger diameters the shift to the following is found to give better closure of the gap:

$$L = \pi\left(S + \frac{4T}{5}\right)$$

The formula has been developed for use on butt-cut packing, but will be equally as effective if the measurements indicated be taken on bevel cut material, the distance indicated being that along either side of the packing from the acute or sharp angle of the bevel at one end to the obtuse or wide angle at the other. This is, of course, when the bevel is at 45 degrees to the axis of plunger or shaft, and when the plane of the bevel passes through the center line of the cylindrical surface being packed.

Since the formula suggested is empirical, its use is indicated only in cases where the packing can not be measured around and cut on the part to be packed, and where prefabricated packing in sets is not available in the lengths and with the clearances indicated for the service to be met. Where the shaft itself cannot be used as mandrel for forming packing rings, a wooden counterpart of like diameter may be used, and possesses the added merit of not harming a highly polished part of the equipment, should the knife or hacksaw being used to cut the packing strike too deep. Where a number of packing lengths are required and a wood lathe is available, a stepped mandrel can be turned to include the more frequently used sizes, and the plunger size painted on each step or band to simplify choice of the proper length and packing size.



S = Shaft or Rod Diameter.

G = Gland or Box Diameter.

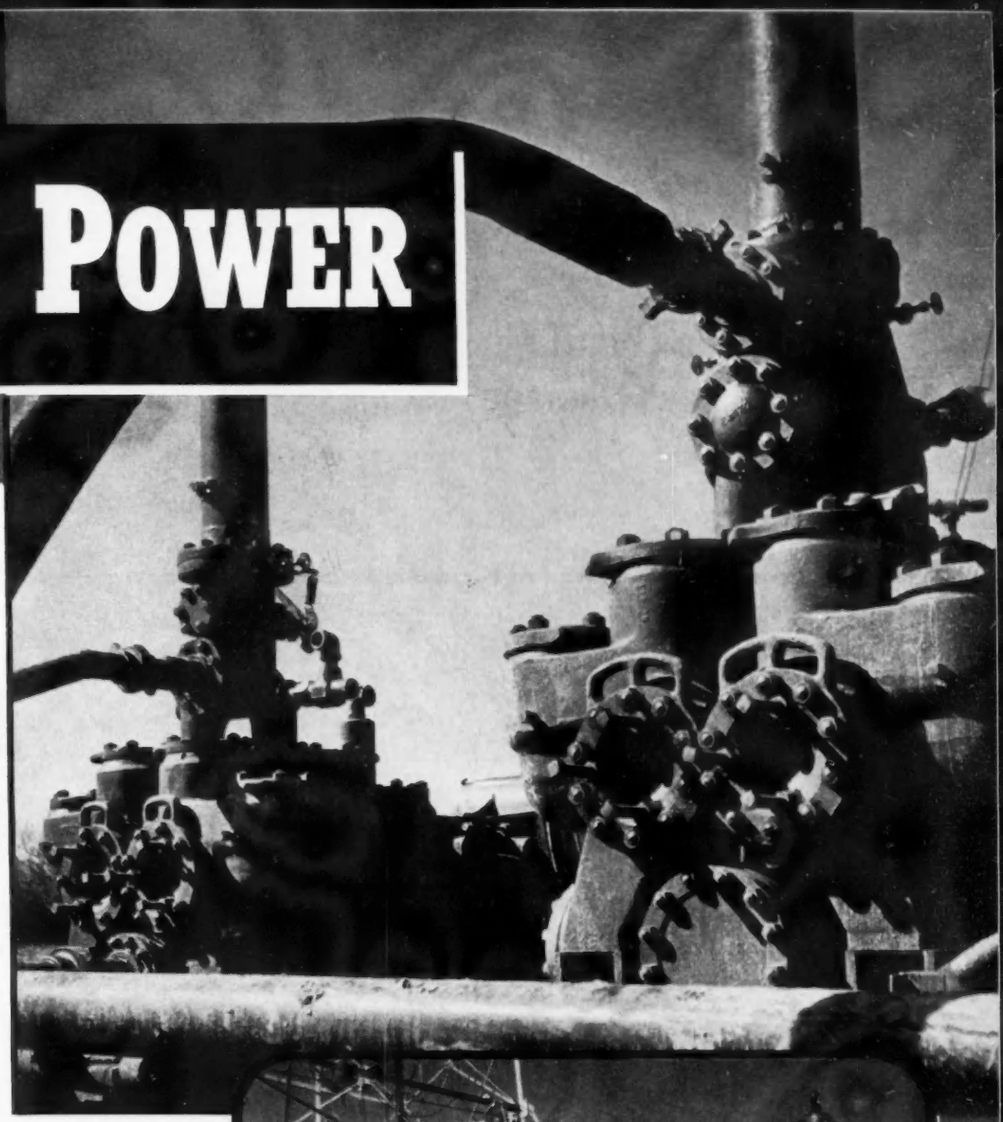
T = Packing Thickness.

D = Empirical Diameter of Cut Ring.

$D = S + \frac{2T}{3}$ (shafts up to 4 inches).

$D = S + \frac{4T}{5}$ (shafts over 4 inches).

RUGGED POWER



GARDNER DENVER

"F X" Power Slush Pump

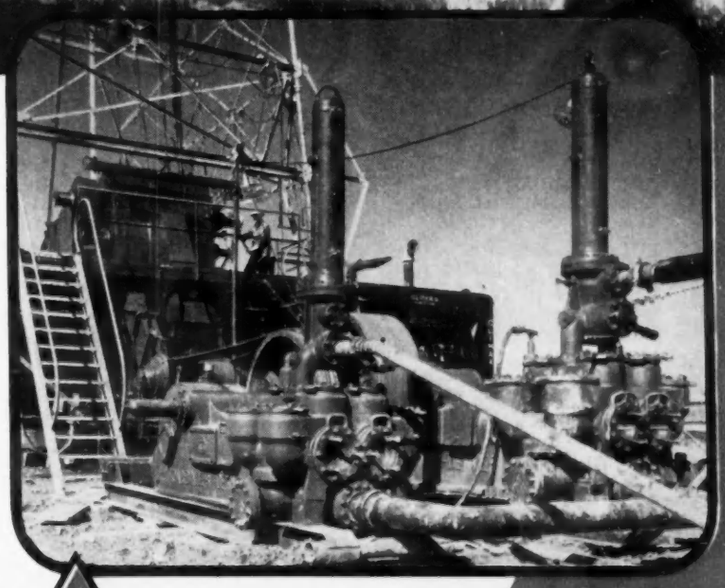
1. **Rugged Strength**—one-piece semi-steel cast frame, with integral crosshead and main jackshaft supports insures perfect alignment and the *extra* strength needed to meet the tough assignments.

2. **Divided Fluid End**—streamlined with long radius—large area fluid passages into the valve pots, assuring less fluid friction, quicker filling and making higher lifts possible.

3. **Positive Flood Lubrication**—assures adequate lubrication of all working parts. *Oil-stop* and *Mud-stop* heads keep mud and water from power end.

4. **Abrasion Resistant**—*"Slush Proof"* hardened rods, liners and pistons—*"Slush Proof"* Duo-seat valves—fluid cylinders cast of wear-resistant GarDurloy, the stronger, tougher cast iron makes Gardner-Denver Slush Pumps long-lived with the minimum of maintenance.

All Gardner-Denver "FX" Power Slush Pumps may be furnished with reduced sizes of liners and pistons for higher pressures.



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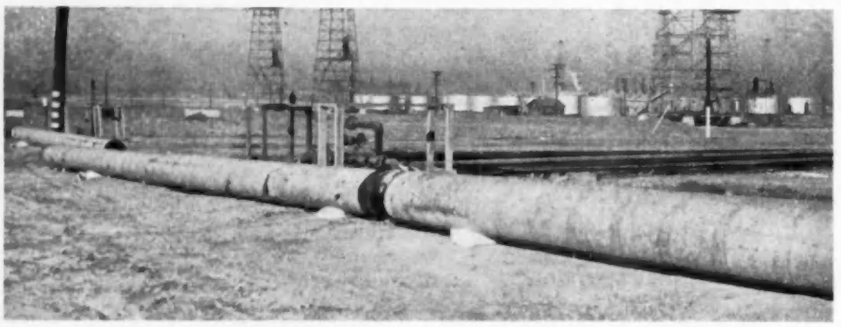
PRACTICAL OPERATING *Hints* FOR

1. *PIPE LAYING*

Sand Bags Guard Line Against Damage

loaded and strung at the ditch-side, one company practically eliminates pre-laying injury to pipe coating by stringing ahead of the pipe truck bags filled with sifted sand or finely crushed earth. Sand is preferred whenever available, due to its non-lumping qualities when wet.



Use of pads, strung along right-of-way ahead of pipe-stringing crew, enables heavily coated joints to be cushioned against rough terrain and patching of coating greatly reduced over normal.

EVEN with most careful handling of coated pipe by the stringing crew, the amount of time taken for patching breaks in the pipe coating runs costs to a sizeable figure on a big job, with the repair bill mounting most rapidly as the size of the pipe increases.

To protect the joints as they are unloaded and strung at the ditch-side, one company practically eliminates pre-laying injury to pipe coating by stringing ahead of the pipe truck bags filled with sifted sand or finely crushed earth. Sand is preferred whenever available, due to its non-lumping qualities when wet.

Since, under normal pipe-laying schedules, pipe is strung only a short distance or at most only a few days ahead of the welding crew, the bags rarely lie in contact with the ground long enough to rot, and therefore are usable a number of times. Where filler material is widely available, it is frequently more economical to empty the sand into the ditch with the pipe, and refill at the point of next use.

Anywhere!

Buckeye Trenchers minimize right-of-way work. Dig in any soil. Ruggedly constructed. Faster. Readily maneuvered. Model 12 (shown) for gathering, gasoline and small natural gas lines. Models 32 or 48 for main lines. The standard trenchers for pipeline work.

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TRENCHERS SHOVELS. CRANES
BACKFILLERS. TRACTOR EQUIPMENT.

2. *WELDING*

Ground Wire, Shade Unitized for Speed-Up

AN INGENIOUS combination of ground terminal and umbrella support is used by one pipe-line contracting company. In place of the usual bar or slab which is tack-welded or simply laid on the pipe to insure completion of the circuit for the welding current, a semi-circular strap is used, carrying at the center of the arc a socket into which fits the handle of the wagon-type umbrella used to shelter the welder.

The strap is spot-welded to the pipe on the side of the joint being run up, the socket being inclined so as to center the shade where desired. When it is desired to move the terminal, the tack weld is broken simply by using the socket as lever, with the fit of the device across the pipe providing heel enough to give ample power to pull apart the relatively light weld used to position the unit.

Since the umbrella is positioned by gripping the wooden handle, and the helper is clear of the other welding cable, there exists no danger of possible short-circuiting.

3. *FUEL CLEANING*

Filter Counterweights Caged Against Hazards

IF FUEL for pumping engines is to be scrubbed or filtered, and the filter element must be replaced more or less frequently, a counterbalance can be attached to the top of the case by a soft-laid wire line running over two small sheaves fitted into cross arms placed on a post.

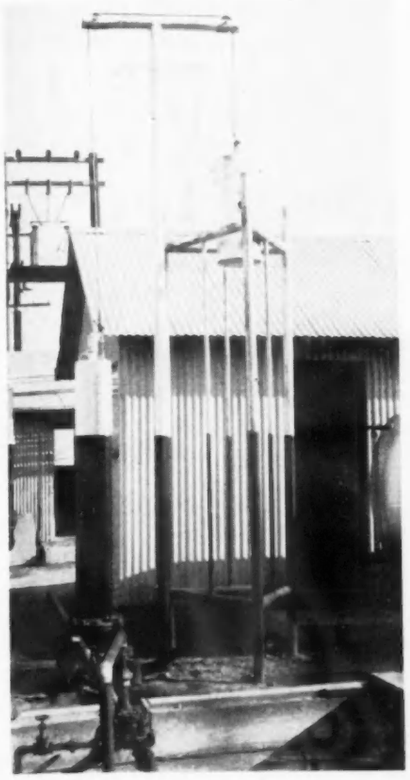
Since the counterbalance unit swings freely from the opposite end of the wire line, a safety cage is made so that employes passing near the filter will be protected from injury when the operator is maintaining the unit.

Vertical pipes welded in a triangular frame, one corner post of which includes

Combining U-shaped ground member and base of socket carrying the big wagon umbrella permits the direction of the shank to be adjusted as the initial grounding spot weld is made.

THE PIPELINER

$5.00 will be paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, Houston.



Triangular structure permits free shifts of mass without danger of men walking into path of weight.

the cross-arm support, are painted contrasting colors to make the installation plainly noticeable at any distance.

4. SAFETY

Inspection Cover Tie Prevents Fishing Job

ON CERTAIN types of horizontal gas engines employed in gas lift and compressor stations, the inspection hole above the main bearings is covered with a loose cast iron cap. Operators with oily fingers attempting to lift these covers sometimes fail to obtain a firm grip, resulting in a lost cap, which may have fallen beneath the flywheel, or perhaps has been caught by one of the spokes and thrown a considerable distance.

This can be eliminated when a quarter-inch hole is drilled through the lifting knob to receive a 3/16-inch rod. The

Eye bolt, carried in hole through inspection cover, restricts travel of unit and prevents loss.

rod is threaded on one end and formed with a loop on the other. After fitting the loop over one of the oil feed lines, the rod is passed through the hole in the knob and secured with a nut, allowing plenty of movement, yet preventing loss of the inspection hole cover plate.

By placing the retaining bolt so as to restrict the swing of the cover toward the flywheel, advantage is taken of the oil pipe to use it as stop and thus check arc of cover before reaching flywheel path.

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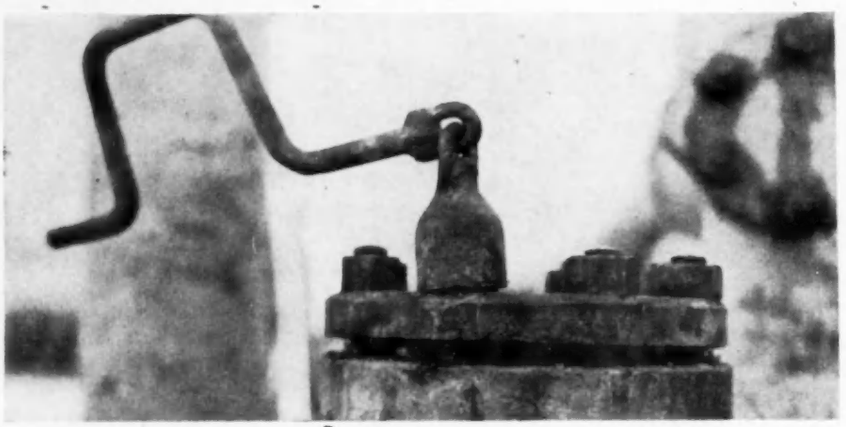
PRACTICAL OPERATING *Hints* FOR

1. MAINTENANCE

Jointed Tool Speeds Pump Head Removal



Incorporation of this universal joint in the wrench handle permits quick spinning of the nut until it begins to bear, after which handle is turned down and maximum leverage attained.

REMOVING cylinder heads from mud pumps, an operation frequently performed when a rig is being steadily used, may be speeded up by remodeling the customary L-shaped wrench for the nuts on the cylinder studs. The mechanic of one company welded the U-bolt portion of a heavy cable clamp to the top of the cap portion of the wrench, and a similiar clamp section to the end of a crank, the two U-bolts being looped together as shown.

Steel for such a joint must not air-temper hard, as slight yield prevents overstressing.

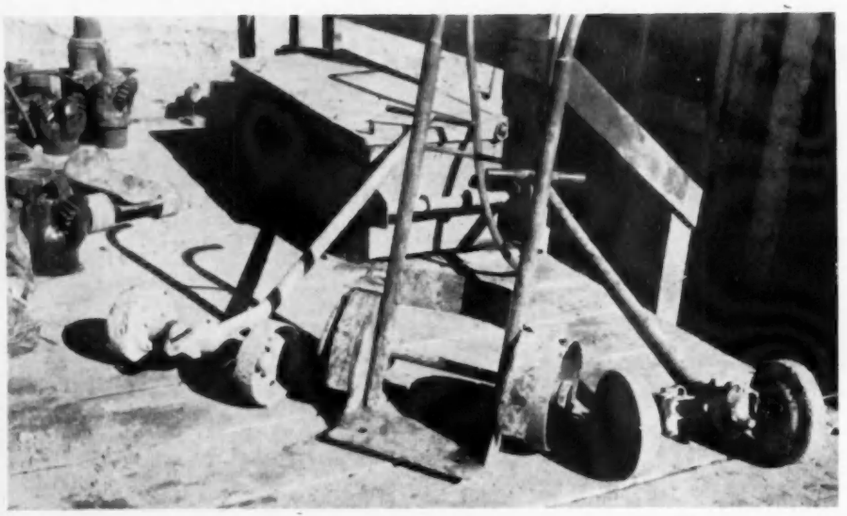
This produces, in effect, a universal joint in the wrench which allows the nuts to be run down rapidly to hand-tight position and when ready to be cinched, the crank handle may be brought down to a horizontal position to add leverage. The same is true when particularly stubborn nuts are being broken loose.

2. TRANSPORTATION

Auto Brake Drums Fill Truck Wheel Need

INEXPENSIVE, free-rolling wheels to be used on small hand trucks and pipe buggies around the drilling rigs are being successfully salvaged by a large company from junked automobile axle assemblies. Several different methods of using this type of equipment are used, but all are alike in that the entire brake drum and wheel bearing assembly is employed. The brake drums in each instance serve as the actual wheels of the buggies, the automobile axle and/or housing merely being shortened by cutting a section out of the middle and welding the two ends together.

The broad surfaces of the brake drums offer the advantage of greater tread area which makes it easier to roll the buggy over the mud and oil which frequently cover the derrick floor and walkways. In addition, there is less likelihood of the unit slipping when hauling a heavy load. The enclosed wheel bearings also provide a perfect means of pressure lubricating the bearings, and keeping them free from dirt and water. The remainder of the hand truck and buggy construction is made of other miscellaneous and junk materials, including piping and boiler steel.



Front wheel brake drums, used on original bearings, form excellent small-wheel units for trucks and other hand-moving equipment around rig floor or warehouse operations.

3. RIGGING UP

High-Line Guide Post Clears Derrick Floor

Sheaves set into this swivelled pipe carry loop of line and prevent tangling while moving units.

OPERATION of the high-line for dragging in heavy objects from the walk or removing them from the derrick floor is greatly facilitated by a

THE DRILLING RIG

$5.00 will be paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, *Houston.*

unique back-up post. The post consists of a short length of salvaged drill pipe to which has been affixed two sheaves, one at the top and the other near the bottom of the post. Over short slots cut in the side of the pipe are welded steel housings inside which the sheaves are mounted, the sheaves being placed so that the inside edge of the groove projects inside the pipe. This arrangement permits the high-line cable to be threaded over the top of the upper pulley, down through the inside of the drill pipe, then out through the lower side of the lower pulley, and back along the walk.

To speed setting-up operations, the post was made to fit inside a slightly larger section of pipe previously buried in the ground at the end of the walk.

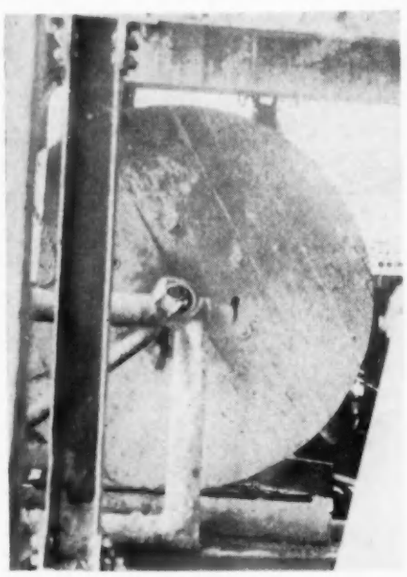
4. ROPE STORAGE

Skid-Type Reel Stand Protects Cordage

STORAGE for a spool of drilling or sand line or manila derrick rope is provided under the corner of the derrick floor farthest removed from the mud lines and possible pollution from the rotary.

A skid-type support is formed from scrap pipe and fitted with inverted saddles over braced risers to take the bar or pipe on which the storage reel operates. Planking laid over the derrick sills provides resting place for the unit, wire or manila line for derrick use being taken from the reel and carried around the structure to the desired point, or drawn up through a hole in the derrick flooring.

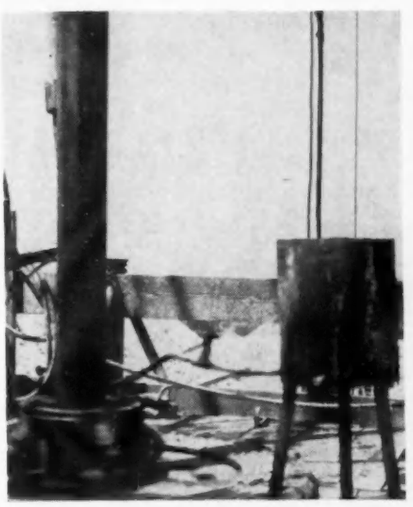
Where the use of the line in intermittent, still further protection to the stored material may be afforded by forming a hood or shield of corrugated iron, setting it in place over the spool, with a slot or notch cut out to span the leading line if it is fixed in position.



Fabricated from scrap pipe, this unit clears floor with reel, preventing mud from reaching pipe.

5. LUBRICATION

Hex Kelly Operation Aided by Oil Feeder



With valve to adjust flow, any desired oil feed may reach rotating kelly and prevent sticking.

HEXAGONAL or octagonal kellies, with a tendency, when run dry, to wedge under heavy loading, must be lubricated to insure smooth, even progress through the drive bushing, the occasional dab of lubricant from the brush being inadequate if the going is hard.

One drilling contractor sets up a 5-gallon container on a welded tripod high enough to give slight gravity head toward the bushing, equipping the container with a short pipe and control valve.

The line terminates in a short section of flexible tubing from a pressure-gun lubricator, the end being set so as to feed the lubricant drop by drop into the corners of the bushing as it revolves. use of the flexible tube gives a yielding section which is not damaged if struck by the kelly, and enables accurate oil distribution to be assured.

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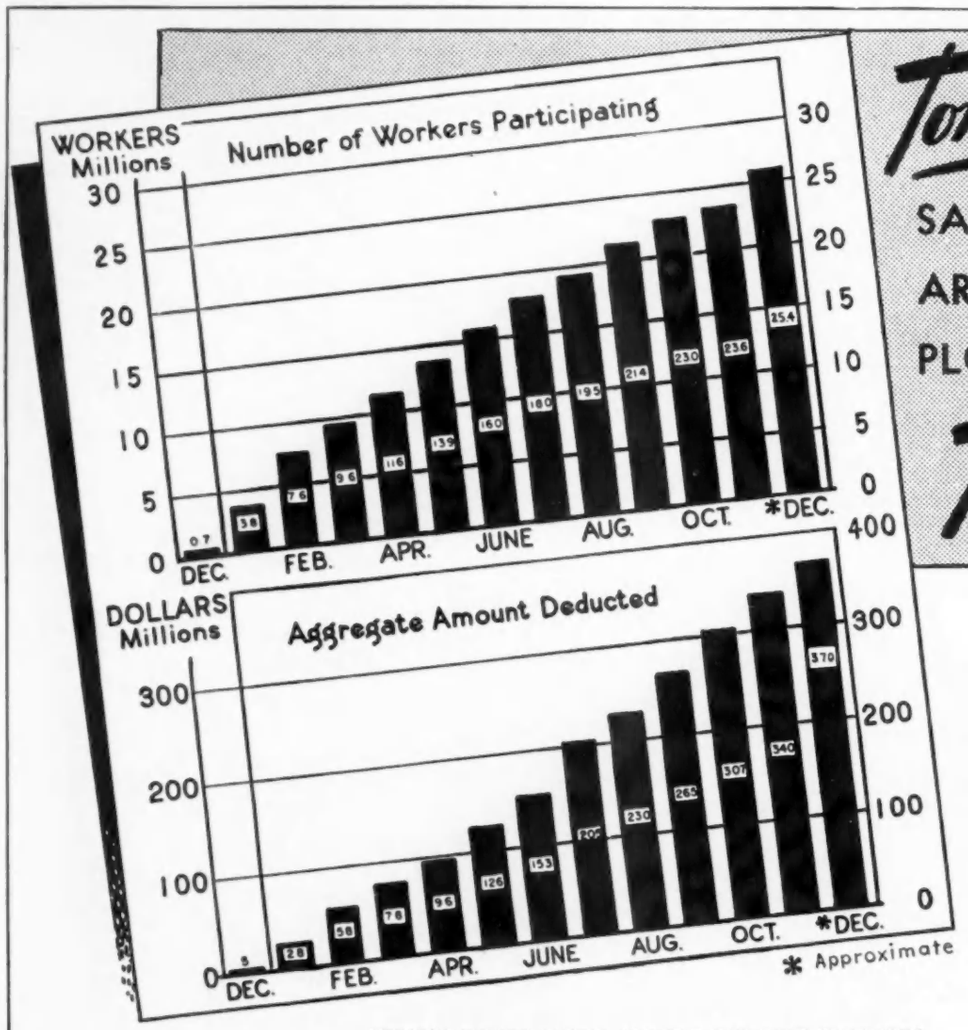


Tomorrow's SALES CURVES ARE BEING PLOTTED . . . Today

THESE CHARTS SHOW ESTIMATED PARTICIPATION IN PAYROLL SAVINGS PLANS FOR WAR SAVINGS BONDS *(Members of Armed Forces Included Starting August 1942)*

STUDY THEM WITH AN EYE TO THE FUTURE!

There is more to these charts than meets the eye. Not seen, but clearly projected into the future, is the sales curve of tomorrow. Here is the thrilling story of over 25,000,000 American workers who are today voluntarily saving close to FOUR AND A HALF BILLION DOLLARS per year in War Bonds through the Payroll Savings Plan.

Think what this money will buy in the way of guns and tanks and planes for Victory today—*and mountains of brand new consumer goods tomorrow.* Remember, too, that War Bond money grows in value every year it is saved, until at maturity it returns $4 for every $3 invested!

Here indeed is a solid foundation for the peace-time business that will follow victory. At the same time, it is a real tribute to the voluntary American way of meeting emergencies that has seen us through every crisis in our history.

But there is still more to be done. As our armed forces continue to press the attack in all quarters of the globe, as war costs mount, so must the record of our savings keep pace.

Clearly, on charts like these, tomorrow's Victory —*and tomorrow's sales curves*—are being plotted today by 50,000,000 Americans who now hold WAR BONDS.

EVERYBODY EVERY PAYDAY AT LEAST 10%

Save with War Savings Bonds

This space is a contribution to America's all-out war effort by

THE OIL WEEKLY

Driving Unit Shift Avoids Belt Replacement

Installation of gear-and-motor unit where purchased power is available provides emergency operation of well in areas of decreased production

ONE of the pumping equipment casualties hardest to replace on the lease is the heavy belt used between prime mover and the bandwheel. Whether of leather or rubber-coated duck, new belts are hard to get, and the replacement belting cost is frequently the deciding factor which puts the well on the "retired" list for the duration.

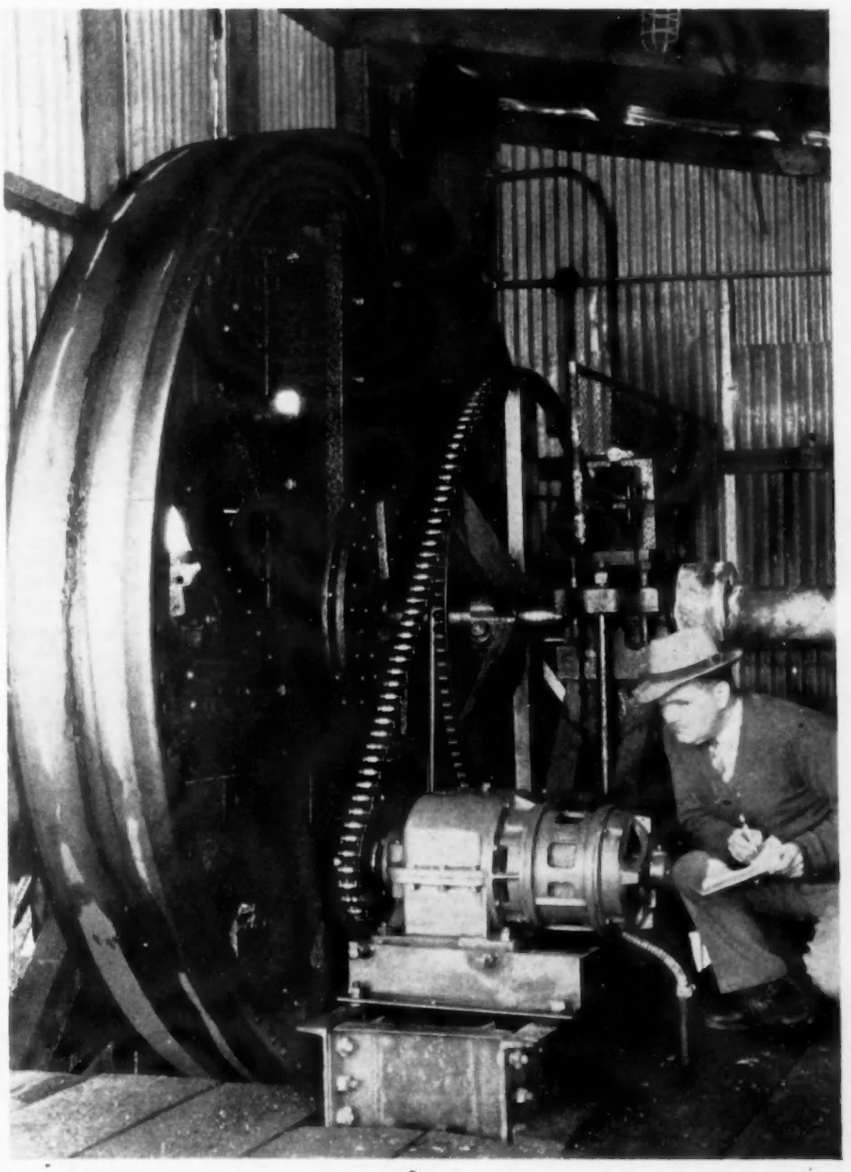
In California where purchased power is used, advantage is taken of the decline in production rate in many fields by the installation of a 3- to 5½-horsepower electric motor at the bandwheel, instead of at the far end of the belt house. By using the compact type of motor and gear unit combined, and by setting the driving unit base directly on one beam of the bandwheel support, it is possible to supplant the wide belt with a comparatively short roller-chain drive. If the large sprocket on the bandwheel shaft be made in two parts, and split to clamp around the shaft, no dismantling is necessary in making the shift to the new drive.

When installing the gear-and-motor combination, one California company cuts the number of pumping strokes from 18 to 6 per minute, reducing wear-and-tear on the lifting equipment, and thus extending its service life over a period during which replacements would be difficult if not impossible to secure.

Through the installation of thermostatic protective devices on the motor, provision is made against damage through overload or running away of the unit in case of a rod break. Provision of push-button control enables the unit to be operated from a central station when desired, with pumping sequence arranged to give uniform current draft over the entire lease or company holdings.

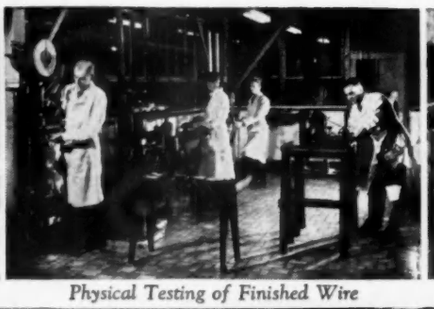
Retention of the bandwheel protects the chain intermediate and gear primary reductions from much of the stress alternations imposed by the pumping cycle, the flywheel effect of the heavy wheel serving to provide part of the energy required on load peaks.

Under normal operation the entire chain drive in enclosed with a guard, for protection of the unit against dirt and moisture, and to prevent possible accident to the pumper when oiling.



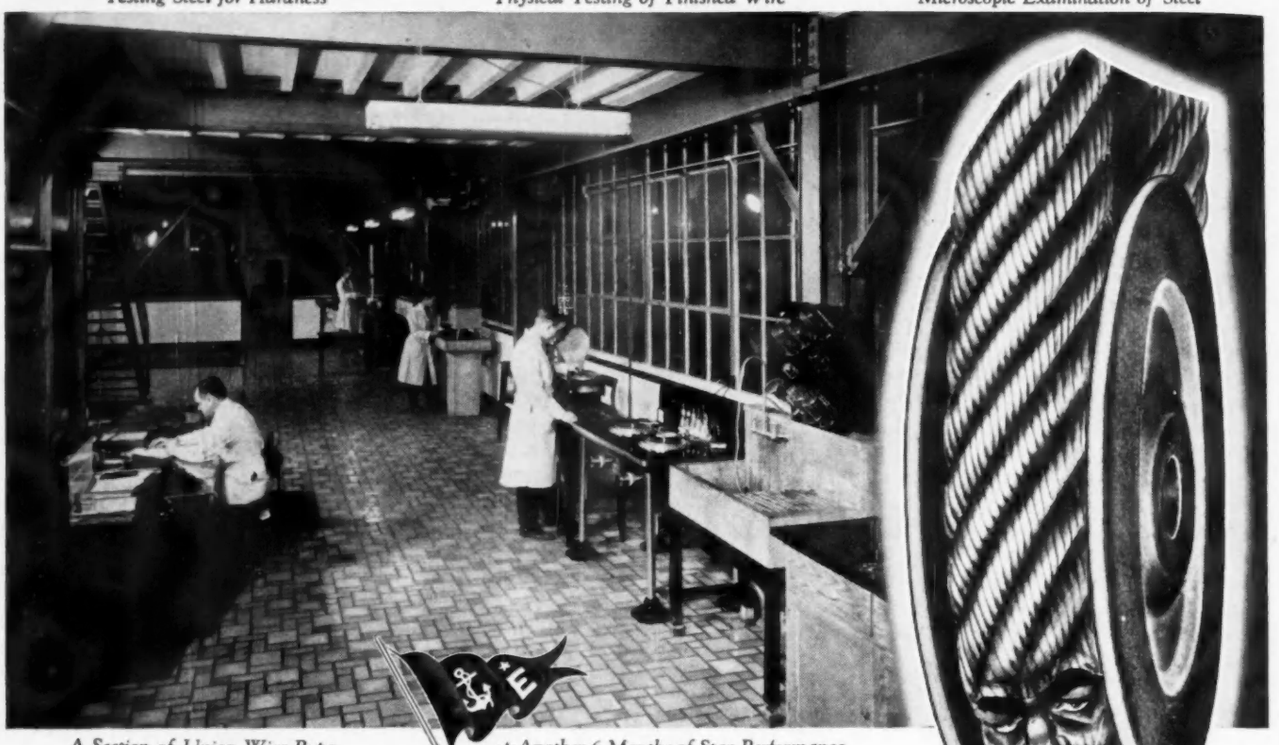
Eliminating the long belt and providing desired cut in strokes per minute, this compact motor and reduction gear enables the well to be produced at maximum formation capacity with marked reduction in replacement and maintenance costs over extended belt units.

Testing Steel for Hardness



Physical Testing of Finished Wire

Microscopic Examination of Steel



A Section of Union Wire Rope Research Laboratory

★*Another 6 Months of Star Performance In War Production*

BIRTHPLACE OF TOUGHNESS

Out of some 4000 steel formulas, relatively few are suited to wire rope making. From long years of experience, Union Wire Rope engineers and metallurgists have determined upon a steel formula for each type of Union Wire Rope.

To be certain each heat meets specified analysis, steel is examined under a powerful microscopic photo and scanning machine (see photo at top right). In minute detail its micro structure and inherent grain size are analyzed. From this analysis is determined the controlled heat-treatment and the subsequent processing operations it is to be given in the mill to secure wire meeting the exact specifications desired.

Samples of the wire then are brought back into the elaborate Union Wire Rope laboratory. First it is subjected to hardness tests under a delicate pendulum machine (see left photo above) and its Brinell hardness determined. Then in a group of six physical testing machines (see photo at top center) the actual tenisle strength, torsional values, fatigue life, ductility and hardness of wires of all grades and sizes are checked. Here, before the wire is stranded, the ultimate tensile strength, toughness and durability of Union Wire Rope is pre-determined.

Many other research activities are constantly carried on in Union Wire Rope's laboratory. Although not pictured here, there are scientific research machines for testing wire coatings by the salt spray, Preece, strip test and wrap test methods.

Here tough wire is born and on long lines of stranding machines (many of them designed by our own engineers) it grows into Union Wire Rope of maximum strength and greater toughness to withstand harder use and longer service.

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☆ ☆ ☆ ☆ WASHINGTON ROUNDUP ☆ ☆ ☆ ☆

MANPOWER problems held the center of the Washington stage last week, with development in three directions.

In Congress, legislation was introduced providing for compulsory labor service as a move to insure an adequate supply of workers for the oil and other vital industries of the country.

At the White House, President Roosevelt ordered the universal adoption of the 48-hour week, and the War Manpower Commission, to which inforcement was delegated, immediately made it mandatory in 32 defense areas where shortages exist and indicated extension in the near future to 102 others where scarcities threaten.

From PAW, a joint statement by Administrator Harold L. Ickes and WMC Chairman Paul V. McNutt appealed to workers in the oil industry to stay in their jobs and not to be panicked by WMC raids on non-essential industries. Nothing, the two officials made it clear, is more vital to the prosecution of the war and maintenance of the home front than oil.

Indications of major new war development in the near future also were noticeable during the week. They included a call for greater sacrifice on the part of the people by Stabilization Director James F. Byrnes, who also hinted at an invasion of Europe "within a measurable period of time," a warning by Secretary of War H. L. Stimson to prepare for heavy casualty lists, and a regulation by PAW paving the way for immediate action to procure oil supply quickly, even to the extent of nullifying outstanding contracts, with protection to contractors against the normal consequences of breaches.

Longer Working Week Ordered Due to Manpower Shortage

»

Work Plan Will Not Abrogate Wage-Hour Provisions

»

McNutt and Ickes Appeal for Workers to Stay on Job

»

PAW Provides Way to Cancel Private Contracts

»

By B. F. LINZ
Washington Correspondent

President's 48-Hour Work Week Order Mandatory In Several Oil Centers

A 48-hour work week in the oil and every other industry was sought by President Roosevelt February 9 in an executive order making that term mandatory for all government agencies and government contractors, and placing in the hands of the War Manpower Commission the authority to require it in all activities.

Directly aimed at getting more production with fewer workers, the order was seen by administration officials as equivalent to an increase of 1,500,000 workers.

The President specifically provided that the longer week should be adopted without abrogation of the wage-hour law calling for overtime pay for work in excess of 40 hours, but officials took the position that while overtime payments will add to wage costs, the increase will be largely offset by the additional production secured.

Administration of the order was placed in WMC, which immediately "froze" labor in all defense centers, forbidding the employment of new workers except where the longer week can be attained without discharges and banning the firing of employes until March 31.

The commission was authorized to establish a work week longer or shorter than 48 hours in any case where the different schedule would more effectively contribute to the war effort.

The Presidential order provided that "for the duration of the war, no plant, factory or other place of employment shall be deemed to be making the most effective utilization of its manpower if the minimum work week therein is less than 48 hours per week.

"All departments and agencies of the federal government shall require their contractors to comply with the minimum work week prescribed in this order and with policies, directives and regulations prescribed hereunder, and shall promptly take such action as may be necessary for that purpose.

"The chairman of the War Manpower Commission shall determine all questions of interpretation and application arising under this order and shall formulate and issue such policies, directives and regulations as he determines to be necessary to carry out this order and to effectuate its purpose."

It was also provided that "nothing in this order shall be construed as superseding or in conflict with any federal, state or local law limiting hours of work or with the provisions of any individual or collective bargaining agreement with respect to rates of pay for hours worked in excess of the agreed or customary work week, nor shall this order be construed as suspending or modifying any provisions of the Fair Labor Standards Act or any other federal, state or local law relating to the payment of wages or overtime."

Included in the 32 labor-shortage areas in which the 48-hour week was made mandatory were several in which there are oil activities.

Among them were Brunswick, Ga., a refining point; the Beaumont, Texas, area, including Orange, Port Arthur and Silsbee; and the Wichita, Kansas, area.

In another 102 areas, including Tulsa, Dallas and Los Angeles, shortages are anticipated within six months; and among others where scarcities may develop after six months are Oklahoma City, Baton Rouge, Amarillo, Corpus Christi, Galveston, Houston and Texarkana.

In 76 other areas, however, including Wichita Falls, Lubbock, Abilene and Austin, Texas and Shreveport and Monroe, La., labor supplies are believed to be adequate to meet all requirements.

Ickes and McNutt Confirm Petroleum As Essential

War Manpower Commission Orders of February 2, depriving heads of families of their 3-A draft status after April 1 if they remain in certain specified nonessential activities or jobs has created a situation of grave concern in the oil industry.

Reports to Washington from all sections of the industry disclosed that workers actually engaged in vital and essential jobs were not reporting for their usual work and were seeking employment in lines which they thought would be considered as more essential by WMC.

In an effort to stem the tide of desertions, WMC Chairman Paul V. McNutt and Administrator Harold L. Ickes issued a joint statement February 9, appealing to oil company employes to stay on their jobs and assuring them that their work was considered equally as essential to the war program as that in munitions plants.

"Petroleum is regarded as one of the most essential of war industries and has been so designated previously by WMC," it was declared. "Bulletins issued by WMC to local United States Employment Service offices and Selective Service Occupational Bulletins Nos. 15 and 21, issued in August and September, 1942, for the guidance of local draft boards and of employers, list 179 specific classes of jobs in the petroleum and natural-gas industry and its transportation service which are directly classed as essential activities.

"Oil and natural gas are vital to this war and it does not help to win the war for men who have long been trained and skilled in this industry to leave their present jobs. We wish to emphasize that while planes, tanks and ships fight the

battles, they cannot fight without oil to fuel them. The production, refining, transportation and distribution of oil and gas are all necessary.

"An order which was intended to apply to such things as ornamental glass, costume jewelry or greeting cards does not carry any implication for such vital industries as oil, mining, food processing and other-essential industries which wartime America must keep fully manned."

Longer Working Week May Hurt Refiners

Issuance of President Roosevelt's order for a 48-hour week has focussed attention upon the operating situation in the refining branch of the industry, where it is said the average working week now is something under 40 hours.

This situation has been under study by PIWC for some time, as a result of fears that the increasingly tight labor situation generally might lead to difficulties with local draft boards. Reports to Washington indicate that the situation is "spotty," with some refineries working long hours and others relatively few. There are a number of reasons why some plants are working only part time—lack of product, difficulties of shipping, etc., but there is a general fear that draft boards might view the situation from the standpoint of getting men for military service rather than of safeguarding existing organizations against developments of the future which might call for the full energies of every man now in the less active plants.

Suggestions have been made that refiners review their situation thoroughly with the purpose of bringing their hours more nearly into conformity with the President's order, which so far has been made mandatory in only 32 areas, only one or two of which are important oil points. Otherwise, it is warned, they may be subject to "raids" by the War Manpower Commission and Selective Service.

War Work or Fight Bill Starts New Wrangle

An all-out draft bill, under which all men and women not in the military services would be required to register and could be assigned to whatever work was deemed necessary to the war effort, has precipitated a new fight on manpower, out of which eventually may come a crystallized plan for the "civilian front" to maintain the Army and Navy.

Strenuously opposed by War Manpower Commission Chairman Paul V. McNutt, who urges that a further period of trial be given voluntary transfers of workers from non-essential to war jobs, the bill, introduced by Senator Austin of Vermont and Representative Wadsworth of New York, represents the viewpoint of a considerable proportion of members of Congress that no further time should be lost in harnessing the nation's labor to the war effort.

Under the measure, whenever the President determined that additional workers were needed in any occupation, he could call for volunteers but, if enough labor was not recruited in that way, could instruct the Selective Service to assign workers.

The suddenly acquired importance of a consistent manpower policy is due to a crisis resulting from the realization that the putting of 4,000,000 more men into uniform this year will leave industry and agriculture seriously short of labor.

To meet the emergency, WMC is issuing lists of non-essential activities and occupations and has announced that men in such jobs will lose the 3-A draft classification given them because of dependents unless they switch over to war work.

WPB Gives Oil AA-1 Classification Under Controlled Materials Plan

Manufacturers of well-drilling machinery and petroleum refining equipment and persons engaged in discovery, production, transportation, refining and marketing of natural gas, petroleum and petroleum products are given an AA-1 preference rating as Class A activities in regulations issued last week by the War Production Board for administration of its Controlled Materials Plan.

CMP, eventually to control the distribution of all scarce materials, governs the use of steel, copper and aluminum by the various industries to complete authorized production schedules for which allotments of any of the metals are made to a prime contractor manufacturing Class A products.

The regulations define the place of preference ratings under CMP and provide methods for obtaining maintenance, repair and operating supplies. Previously issued regulations cover applications for, receiving and passing on allotments; inventory limitations, and sale of controlled materials by warehouses and distributors, and a final set of rules shortly to be issued will cover construction and remodeling of facilities.

Where manufacturers have been given allotment numbers or symbols for a specific program, their preference rating will move up a step, and a rating of AA-1 with an allotment number will take precedence over another AA-1 rating without an allotment number, but will be secondary to a rating of AAA, with or without an allotment number. An AAA rating takes precedence over all other orders.

When an allotment is passed on to a secondary consumer manufacturing Class A products, the prime consumer making the allotment will apply to the secondary's authorized production schedule the same rating he has received for his own related schedule.

Orders for maintenance, repair and operating supplies will carry the symbol MRO after the preference rating.

The preference ratings assigned by the regulations supersede those assigned by orders in the "P" series for maintenance, repair and operating supplies, in the case of materials or products to be delivered after March 31. All "P" orders, however, are specifically continued in existence and all restrictions and requirements contained in them remain in full force.

OPA May Grant Higher Residual Fuel Prices

A general increase in the price of residual oils may be authorized by OPA this week, passing on an application and reports now before Sumner T. Pike and other top officials of the organization.

If granted the increase is expected to be on a sliding scale basis, dependent upon the proportion of lighter and more expensive oils blended to increase the output of residual.

Meanwhile, the question of higher prices for crude is still before PAW officials, who are compiling factual information regarding the situation in all fields and areas to determine whether a general advance should be recommended to Price Administrator Brown.

Kentucky Field Gets Five-Cent Advance

A five-cent increase in the maximum price of crude produced from the Uniontown (Ky.) pool, to bring it to the level of oil of similar grade in the Illinois Basin and Smith-Mills (Ky.) pool, was ordered by OPA February 12, effective February 18.

The order will raise the ceiling on the price from $1.32 to $1.37 per barrel, but will not affect retail prices.

OPA explained that since the discovery of the pool last summer, new production has been brought in from deeper formations, pipe line facilities have been made available to the Ohio River, and the cost of delivering the oil to its destination has been reduced. Pure Oil Company is the principal purchaser.

Wine to Alcohol to Oil —More Rail Tank Cars

Approximately 700 additional tank cars have been made available for the transportation of oil by diversion from the wine industry, through a "double shuffle" which will shift the wine cars largely to industrial alcohol and the alcohol cars to petroleum.

Orders providing for the transfers have been issued by the Office of Defense Transportation at the request of the War Production Board, and will add approximately 7,000,000 gallons to the oil capacity of the railroads.

Alcohol cars are to be given the oil industry because they average 10,000 gallons, while the capacity of the wine cars runs from 6500 to 8000 gallons. Approximately 1000 wine cars, the wine industry's total supply except for a few refrigerator cars not suitable for other purposes, will go to the alcohol industry so that it may maintain its transportation capacity unimpaired.

PAW Provides Basis For Cancelling Contracts Hindering War Production

Anticipating a stepping up of military operations in the near future, as promised recently by American and British leaders, and consequent demands on the oil industry, PAW has issued Petroleum Regulation No. 1, providing the basis for nullification of contracts which may stand in the way of war production.

Of itself, the regulation merely implements the authority already conferred upon PAW, it was said by officials, and is designed to avert the necessity of the issuance of formal orders in the individual cases, expected to be rare, where it will be necessary to direct immediate action to further the war petroleum-supply program or to meet local emergencies which may arise.

Specific directions which may be issued pursuant to the regulation will override the provisions of any contract to which the person addressed is a party, it was explained. Such specific directions also will override any general petroleum regulation or administrative or distribution order or directive.

A more definite indication of the possible far-sweeping scope of the regulation was given by Deputy Administrator Ralph K. Davies, who declared it necessary to bring about maximum flexibility in the coordination of supply and demand.

"We must face the probability that an increased pace of military operations will result in many sudden shifts of supply and demand that will require fast action," Davies said. "We must have the power to move swiftly in individual cases to meet sudden specific problems.

"In meeting these emergency problems there are bound to be cases where contractual obligations will stand in the way of compliance with necessary directions of this office.

"One of the basic reasons for the regulation, therefore, is to confer the legal immunity of the Second War Powers Act on the particular persons affected, with respect to liabilities under such obligations which otherwise would result from complying with such directions.

"The regulation will in this respect, make possible continued government-industry cooperation in carrying out quickly and effectively the policies and programs necessary to assure a maximum supply of petroleum products for military and essential civilian use."

Army and Navy to Agree With Companies on Prices

Charges to be made by oil companies for services in storing and distributing aviation gasoline for the Army and Navy after February 16 are to be determined through agreement between the oil companies and the War and Navy Departments, under an amendment to the general maximum price regulation issued February 10 by OPA.

Adoption of the amendment follows a change in the method by which the military services acquire their aviation-gasoline supplies. Formerly the departments bought on the basis of specified delivered prices, but now the refineries sell the gasoline at refinery points to the Defense Supplies Corporation, which in turn sells it to the Army and Navy, which arrange with the companies for its delivery at various times and places.

Under this system, the companies order shipments from refineries to terminals or bulk plants, handle and store the gasoline, re-route cars, and provide transportation from refinery terminals and bulk plants to destination.

Since these services were not performed in March, 1942, the base period for GMPR, it was necessary to provide a method for compensation of the companies. The prices agreed upon between the companies and the departments are to be filed with OPA for approval.

Restrictions Eased in Part of East Coast

Formal orders taking all of West Virginia except the eight easternmost counties out of the East Coast gasoline shortage area and also releasing Western Florida and Bristol, Virginia, were issued by OPA last week, but relaxation of restrictions in West Virginia was made contingent upon the ability of the state to produce all the motor fuel it would consume.

Acting on representations that motor-fuel supplies in the western part of the state exceed local requirements, PAW prohibited barge shipments of gasoline from District 3 into either West Virginia or Western Pennsylvania for local consumption, effective until March 10.

It was indicated, however, that the release of West Virginia would be only temporary, and for such period until the present surplus stocks were exhausted.

PAW released figures showing that shipments of gasoline from the Southwest into West Virginia and Western Pennsylvania amounted to 387,000 barrels during December.

The exclusion of Bristol, Virginia, was ordered to correct an inequitable marketing situation arising out of the fact that Bristol, Tennessee, runs to one side of the main street and the Virginia city runs to the other, and under the former set-up residents of the Virginia half need only cross the street to get four gallons of gasoline for coupons which on their own side were worth only three.

The lifting of the Eastern restrictions in Florida west of the Apalachicola River restored the original boundary of the East Coast shortage area.

Asserting that he had made good on his promise to supply New England with at least 75 percent of its heating-oil requirements, Ickes made public figures February 11 showing that deliveries of the 13 principal suppliers during the last quarter of 1942 were 88 percent of those for the corresponding period of the preceding year, and when adjusted the above-average temperatures of 1941 were nearly 84 percent of the calculated normal.

Reports from the Northeastern States show that New England difficulties this winter have been due to increased population and increased demand rather than to a cut in supplies based on 1941-42 consumption.

January figures on deliveries are not yet available but are believed to be in line with those of previous months, but at the same time Ickes warned that there are still some weeks of winter and possibly extremely cold weather ahead of the area and there can be no relaxation of conservation until the danger of an emergency demand is definitely passed.

Big-Inch Oil Expected In Illinois This Week

With oil moving north as fast as line installations are completed, its first arrival at the Norris City terminus of the initial leg of the "big-inch" pipe line is expected to be celebrated February 19, when oil will begin to move from that point to the East by rail.

PAW officials, pleased over the completion of the first leg of the world's largest pipeline, said all energies now would be devoted to construction of the second half, conducted so far under rather severe winter conditions. They refused to speculate, however, as to the extent to which the new facility would ease the strain on the East Coast, pointing out that much depends upon military demand and the weather during the remainder of the winter.

Florida Pipe Line Gets Initial Filling of Gasoline

Initial charging of the new trans-Florida pipe line has been started at its western end, and oil will be pushed through to Jacksonville as rapidly as final installations on the 199-mile conduit are completed, it was announced February 9 by PAW.

The eight-inch line, linking Gulf and Atlantic Coast waterways, built completely of used material, will handle gasoline until the East Coast situation improves but eventually will move other light products as well.

Deliveries to East Coast Rise 41,869 Barrels Daily

The weekly report of PAW showed that rail deliveries to the East Coast averaged 838,327 barrels a day during the week ended February 6, an increase of 41,869 barrels over the preceding week, with a slight improvement in the overall supply situation.

Stocks continued to decline, but not as sharply as anticipated, it was stated by Deputy Administrator Davies, who added that the situation is "still serious and one week's developments do not justify either optimism or complacency on our part." Stocks continue at about 35 percent of normal, or five percent below what is considered the critical working level, Davies said.

"Every dime and dollar not vitally needed for absolute necessities should go into WAR BONDS and STAMPS to add to the striking power of our armed forces."
—*President Roosevelt*

EVERYBODY EVERY PAYDAY 10%

IN WAR BONDS

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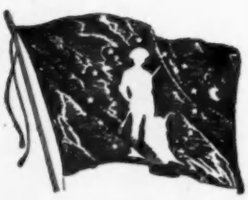
New Goal for Payroll Savings Plan!

Along with increased war production goals go increased costs . . . extra billions which must be raised, and raised fast, to win this war. That means we must raise our sights all along the line, with every firm offering every American with a regular income the chance to buy more *War Bonds*. YOUR help is asked in encouraging employees to put at least 10 percent of their pay into War Bonds every payday, through the Payroll Savings Plan. For details of the Plan, approved by organized labor, write, wire, or phone Treasury Department, Section T, 709 12th St. N. W., Washington, D. C.



U.S. WAR SAVINGS BONDS

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THE OIL WEEKLY

Report 65 Concrete Barges Being Built

A total of 65 concrete barges for oil transport will be completed this year as part of a program of barge and tug construction which will cost $100,000,000, it was disclosed by Rear Admiral Emory S. Land, chairman of the Maritime Commission, before a House appropriations subcommittee.

The oil barges, Land reported, will be of two sizes, 43 of them with a capacity of 39,000 barrels and 22 capable of holding 44,000 barrels.

In addition, the commission will construct 1048 wooden barges ranging from 90 to 3750 deadweight tons, 995 of them for Lend-Lease shipment abroad and the remainder for coal and dry cargo.

Land admitted that neither his commission nor the Navy is enthusiastic about concrete ships, and that the British experience with them has not been very satisfactory, but explained the barges were being built as "insurance" and told the subcommittee that after the war they will be excellent portable storage tanks.

He refused to accept responsibility for the conversion of steel barges from dry cargo to oil, declaring that a problem of the Office of Defense Transportation, for which the commission was to do the actual work. The major difficulty with that program was the inability to secure materials both for the conversion operations and for the building of propulsive equipment.

The Maritime Commission itself, he said, has not been able to contract for the number of tugs or barges that it wants for its own program.

OPA Seeks More Uniform Gasoline Prices

Following up its recent action designed to straighten out the price situation in crude oil by granting relief to designated areas, OPA last week sought to attain greater uniformity in basic gasoline and heating-oil prices by extending the application of base-period reference prices to all tank wagon sellers.

Trailer-Tanks Release Cars from Short Hauls

More than 320 of the 892 new tank semi-trailers authorized by the War Production Board already have been assigned, it was disclosed February 1 by Transportation Director Joseph B. Eastman.

Purchasers of the equipment, it was announced, will be made eligible by the War Department for Certificates of Necessity allowing them to amortize their investments in the units over either a five-year period or the period elapsing between the purchase and the end of the war emergency.

This plan, Eastman said, is designed to protect operators on their investment in equipment which is essential to the war program and which they would not buy under normal circumstances. Under it, operators will not have to extend amortization over a five-year period if the war emergency ends sooner, but will be allowed to depreciate their investment in the semi-trailers against the earnings which accrue during the period between their purchase and the end of the emergency.

Eastman said that within two months most of the new semi-trailers will be in the hands of operators, releasing rail tank cars for longer hauls. Already, he said, diversion of short-haul movements has made some 14,000 cars available for the long hauls for which they are most effective.

Roosevelt's Help Sought In Getting Crude Raise

The East Texas Oil Association, in a resolution passed February 8, called upon President Roosevelt for a fair over-all increase in the current price of crude oil. The resolution asserted that the cost of discovering and developing new fields and producing oil had increased while the price remained more than 40 percent below parity as compared with other commodities.

Pointing out that the annual consumption of oil had been increasing while the discovery rate had declined, the resolution said that many small producing wells are being abandoned prematurely because recovery was not profitable at the present price.

The association called the President's attention to recommendations by several Congressional committees for a price raise.

Japs Convicted for Oil Tank Conspiracy

Plans of two Japanese to deliver oil storage tanks to the Japanese army were thwarted last year by Treasury agents, it was disclosed by Elmer L. Irey, chief coordinator of enforcement, in a report to Secretary Morgenthau on operations in 1942.

The tank plot was one of the three most outstanding of hundreds of important cases investigated during the year, Irey said. Also in the "top" three were the efforts of a Japanese national to conceal more than $500,000 in Japanese bonds, who drew a nine-year prison term and a $5000 fine, and the participation of a naturalized German in a Reich-inspired plot to sell in this country jewels looted from the occupied Lowlands.

The Japanese oil intrigue resulted in the conviction of Charles T. Takahaski and Edward Y. Ozuma for a conspiracy to ship the Japanese army three new steel, 80,000-barrel storage tanks, for which they attempted to obtain export licenses by the ruse of setting up a dummy corporation in China which ostensibly was to receive the tanks. The conspiracy originated before Pearl Harbor.

Probable Oil Areas Mapped in Canada

Mapping of possible oil structures, conducted as part of the geological survey of the department of mines and resources in 1942, has revealed one area in British Columbia and two in Alberta considered suitable for an accumulation of oil.

In British Columbia, F. H. McLearn and J. F. Henderson examined an area at Moniman Pass, northeast of Prince George near the Alberta boundary. One location was reported "definitely promising as an oil structure."

In Alberta, C. O. Hage completed mapping the Dyson Creek area southwest of Calgary and the Cowley area in southwestern Alberta. The survey showed that both areas have structures suitable for the accumulation of oil. No deep drilling has been done in the areas.

A. I. M. E. Technical Program Shows War Influence; Will Honor John Suman

The 158th meeting of the American Institute of Mining and Metallurgical Engineers is scheduled for February 14 to 18, with the technical sessions to be held in the Engineering Societies Building, 25-33 West 39th Street, New York City.

The war is principal factor in the shaping of the program for all the various technical sessions, being especially evident in the papers on reconditioning to be presented before the production engineering meeting, and the general trend of the program dealing with petroleum economics.

The meetings of the Petroleum Division will be under the chairmanship of Harry P. Stolz, of Stanley & Stolz, consulting engineers of Los Angeles. He will share chairmanship duties with M. L. Haider at the Tuesday, February 16, morning meeting of the division, succeeded by other co-chairmen at following meetings.

Separate meetings are planned, all but the economic session to be held in room 1101 of the Societies building, to deal with technology, production engineering, foreign and domestic production and economics, scheduled for room 501-A and B.

At the annual banquet, to be held in the Waldorf-Astoria Hotel Tuesday evening, there will be presented to John R. Suman, vice president of Humble Oil & Refining Company, Houston, the Anthony F. Lucas Medal for 1943 "for distinguished achievement in improving the technique and practice of producing petroleum. For the oil producing research carried on under his direction which has revolutionized production methods and has established 'oil-reservoir engineering' on a sound foundation, thereby resulting in greatly improved efficiencies, greater economies, and doubling the proportion of recoverable oil."

The full program of the petroleum division follows:

Monday, February 15, 2:45 p.m.

Room 1001. Publications Committee, Petroleum Division (executive session).

Tuesday, 9 a.m.

Room 1101. Technology. Harry P. Stolz and M. L. Haider, associate chairmen.

Air Drive Experiments on Long Horizontal Consolidated Cores. By B. H. Krutter and R. J. Daye, Pennsylvania State College.

Role of Connate Water in the Secondary Recovery of Oil. By Parke A. Dickey, Forest Oil Company, and Robert B. Bossler, Brundred Oil Corporation.

Viscosity of Natural Gases. By Leo B. Bicher, Jr., and Donald L. Katz, University of Michigan.

Selective Acidizing and Permeability Determination by Electrical Means. By Dana G. Hefley and P. E. Fitzgerald, Dowell Incorporated.

Further Developments in Caliper Logging. By C. P. Parsons, Halliburton Oil Well Cementing Company.

Tuesday, 2 p.m.

Room 1001. Production Engineering. Charles A. Warner and Veleair C. Smith, associate chairmen.

Experiments in the Substitution of Non-ferrous Material for Steel Oil-Well Casing. By Frederick Squires, Illinois State Geological Survey.

Reconditioning Practices — Symposium: Remedial Work in the Eastern Area of the United States. By W. N. Little, Tide Water Associated Oil Company.

Reconditioning Practices in the Mid-Continent Area Are Entering a New Era. By L. E. Elkins, R. H. Smith, P. P. Manion, Jr., and L. F. Peterson, Stanolind Oil & Gas Company.

Reconditioning Practices in the Gulf Coast. By C. E. Reistle, Jr., and T. A. Huber, Humble Oil & Refining Company.

The Poza Rica Oil Field. By John Murrell, Office of Petroleum Administrator for War.

The Schuler Field, Union County, Arkansas. By H. H. Kaveler, Schuler Unit Engineering Commission.

Wednesday, 9 a.m.

Room 1101. Symposium on Oil Production, Foreign and Domestic. W. P. Haynes and James Terry Duce, associate chairmen.

Foreign Production

There will be a general review of foreign areas not specifically dealt with in separate reports. World production will be discussed by R. V. Whetsel. The entire production program will be divided between the morning and afternoon sessions according to the time required for presentation and volume of discussion.

Domestic Production

South Arkansas. By Alex M. Crowell, director, Arkansas Oil & Gas Commission.

California. By V. H. Wilhelm, U.S. N.R.

Illinois. By A. H. Bell, Illinois State Geological Survey.

Indiana. By Ralph E. Esarey and George V. Cohee, Department of Conservation.

Kansas. By W. A. Ver Wiebe, Department of Geology, University of Wichita.

Kentucky. By George Straughan, Kentucky-West Virginia Gas Company.

Louisiana. By J. Huner, Jr., Louisiana Geological Survey.

Michigan. By Theron Wasson, The Pure Oil Company.

Mississippi. By H. M. Morse, Mississippi Oil & Gas Board.

Missouri. By Frank C. Greene.

Nebraska. By E. C. Reed, assistant state geologist.

New Mexico. By John M. Kelly, secretary, New Mexico Oil Conservation Commission.

New York. By C. A. Hartnagel, assistant state geologist.

Ohio. By Kenneth Cottingham, Ohio Fuel Gas Company.

Oklahoma. By Raymond D. Sloan, The Carter Oil Company.

North Pennsylvania. By A. C. Simmons.

South Pennsylvania. By John T. Galey.

Tennessee. By Kendall E. Born, Tennessee Division of Geology.

Texas:

East and East Coast. By D. V. Carter, Magnolia Petroleum Company.

Gulf Coast. By P. B. Leavenworth, Gulf Oil Corporation.

North. By Lewis MacNaughton, of DeGolyer, MacNaughton & McGhee.

South Central. By William H. Spice, Jr.

North Central. By Monroe G. Cheney, Anzac Oil Corporation.

South. By James Halbouty.

West. By R. S. Dewey, Humble Oil & Refining Company, and Taylor Cole, University Lands.

Panhandle. By Basil B. Zavoico.

West Virginia. By David B. Reger.

Rocky Mountains. By C. E. Shoenfelt, Petroleum Information, Denver.

Wednesday, 12:15 p.m.

Executive Committee, Petroleum Division, Engineers' Club, Room 1. Luncheon meeting.

Wednesday, 2 p.m.

Room 1101. B. B. Zavoico and P. E. Fitzgerald, associate chairmen. Domestic Production (continued).

Wednesday, 6 p.m.

Hendrik Hudson Room, Roosevelt Hotel. Petroleum dinner (stag; informal). Speaker, R. S. Meriam, Harvard Business School.

Thursday, 9 a.m.

Room 501-A & B. Petroleum Economics. The following program will be divided between morning and afternoon sessions according to discussion.

N. D. FitzGerald and Cecil Burrill, associate chairmen.

Petroleum Exploration and Development in Wartime. By E. DeGolyer, assistant deputy petroleum administrator.

Transportation Problems of the Oil Industry. By Sidney Swensrud, vice president, Standard Oil Company of Ohio.

War Impacts on the Economic Balance of the Oil Industry. By John D. Gill, The Atlantic Refining Company.

The Economic Position of Natural Gas. By Veleair C. Smith.

New Economic Developments in the Fuel Industries. By Wilbert G. Fritz, National Resources Planning Board.

Petroleum Situation on the Pacific Coast. By Paul J. Howard, chief appraisal engineer, Kern County, California.

Capital Flow and Capital Formation in the Petroleum Industry, 1934-1941. By Joseph E. Pogue, vice president, Chase National Bank.

Thursday, 2 p.m.

Room 501-A & B. Economics (continued), L. F. Terry and S. A. Swensrud, associate chairmen.

Sunray Completes Purchase Of York & Harper Interest

Sunray Oil Company, Tulsa, has acquired York & Harper, Inc.'s interest in their jointly owned properties, involving 650 acres with 35 pumping and flowing wells in the Foster field, Ector County, West Texas, for $340,000 cash. The two companies negotiated an operating agreement in September, 1937, when Sunray Oil Company paid $350,000 cash for the original 7 wells, carrying York & Harper, Inc., for ⅛ overriding royalty on the ⅞ production until the return of the original investment and development costs, then the property was to be owned on a 50-50 basis.

Californians Protest "Unofficially Rumored" Regional Crude Price Raise

"Too little and too late!" sums up the outcry of California oil men in protest against unofficially announced regional price increases reliably reported to have been recommended by PAW to OPA.

Expressions of keen disappointment came from all divisions of the industry in California, which for months past has been gearing itself to a supreme effort in the vital task of building up production in that state to a point that could assure adequate supplies for Allied forces in the war of the Pacific.

The Californians were confident they had made their case at Washington, demonstrating with proof that production only could be increased if the government would lend its support with respect to material priorities and relaxation of other drilling restrictions, and most important of all, would permit recovery of prices to a level more nearly approaching normal so that returns would represent more adequate coverage of present-day increased costs and wider risks.

As reported in Los Angeles the price recommendation would start with a maximum increase of 25 cents a barrel for oil of 15 gravity and below, graduated on a descending scale to 25.9 gravity. A special blanket increase of 25 cents a barrel would apply to Santa Maria Valley production. It would be accompanied by a compensating fuel-oil increase of 25 cents a barrel and a rise of $1.45 a ton for asphalt. This is the gist of the schedule, full details of which admittedly were unavailable at midweek.

Including some of the most prominent leaders of the industry, spokesmen outspokenly criticized the proposal as totally inadequate and one which could not be expected to encourage fresh efforts to increase production.

Stewart's Opinion

Representative of the general viewpoint, a considered and temperate criticism by W. L. Stewart, executive vice president of Union Oil Company, cited the principal short-comings of the reported proposal. Because of the magnitude of Union Oil Company's operations in the state, its admitted position of leadership and the prominence of its president, Reese H. Taylor, who had personally made a plea to Washington for an increase of at least 50 cents a barrel, the Stewart statement commanded attention. He said:

"While it is recognized the objective of ceiling price adjustments at this time is to increase the quantity of fuel oil available on the West Coast for the armed forces, it should be realized that normal factors of supply and demand, as well as price, also enter into the picture. It is unsound to increase ceiling prices in a manner which will cause dislocation of purchases or dislocation of production under normal operating conditions.

"A 25-cent increase in 15-gravity crude is furthermore insufficient to more than meet the higher level of operating costs already experienced in many fields. It does not leave any margin over to induce the industry to further expand its development activities to create more low-gravity—high unit cost—oil output. And, whenever a surplus of crude is available, heavy oils at a disproportionately high prices in relationship to light oil, will go begging.

"Fuel oil values are present in nearly all gravities of crude oil produced. A recommendation which fails to give consideration to the fuel-oil content of all crudes of whatever gravity, and which further distorts the dislocation of values already present, obviously is at best a half measure."

Probably the most representative expression of the small operator viewpoint was voiced by Richard Fenton, executive vice president of the California Stripper Well Association.

"Stripper-well operators," he said, "are astonished at the character of PAW's reported crude-price recommendation. How Washington expects to maintain essential stripper reserves or have smaller operators develop new reserves by such a recommendation defies understanding. By its terms it condemns the future of thousands of smaller wells producing oil of average gravity. It is a niggardly approach to a tremendous problem."

Stocks Dwindle

New studies of the fuel oil situation in California show that the seriousness of its character is becoming greater each month that passes; that something must be done about it, and at once, seems imperative. Current demand continues strong with no important gain in production, with the result that inventories in storage are vanishing.

The latest estimate made by a responsible authority gauges remaining fuel oil in storage at less than 100 days supply. This figure excludes "working inventory" comprising oil which may be in transit or otherwise not immediately available. The calculation is based upon Bureau of Mines figures showing fuel oil in storage at January 1, 1943, totaled 45,011,000 barrels, with demand then 391,000 barrels daily. Exactly two years before, at January 1, 1941, storage total was 61,119,000 barrels, which, with a current demand then at 281,000 barrels daily, represented 217 days supply.

It has escaped some who are following the California fuel-oil trend that in point of days supply, where the decrease is 47 percent over a two-year period, the drop has been much sharper than indicated by the 26 percent decrease in storage total.

Tentative Standard for High-Pressure Gas Measure

The high-pressure division of the Natural Gasoline Association of America, following a year of study under the direction of C. R. Williams, The Chicago Corporation, Corpus Christi, has issued a tentative standard method for calculation of high-pressure gas measurement, in which have been incorporated findings from the series of check tests the association has been running on selected wells in the South Texas area.

The standard takes up the two types of problems encountered in high-pressure-gas metering; first presenting means for checking the density of the gas, involving the choice of the correct compressibility factor to account for deviation from natural gas laws; second dealing with the reduction in pressure consequent upon the liquefaction of some of the initial gas volume through retrograde condensation. This liquid may interfere with uniform meter operation and must be included in the density of the gas flowing.

The matter is not presented in highly technical form, but is adapted to field use, discussing the problem and presenting supporting data and reference bibliography.

The standard is divided into two parts, the first dealing with orifice correction factors; the second primarily with the compressibility factor. The standard is available through the N.G.A.A., 922 Kennedy Building, Tulsa, Oklahoma. It is priced at 50 cents per copy, with 20 percent reduction if 25 or more copies are ordered.

Hearing to Determine Status Of East Texas Shut-in Wells

A hearing of unusual importance on the East Texas field will be held in Austin on February 17, at which time the Texas Railroad Commission will seek to determine whether it should "freeze" the allowables for wells closed in, when these allowables are transferred to wells on the same lease or to other properties.

Last year the commission wrote an order which permitted an operator to close in a well that ceased flowing, if he could not get a priority on pumping equipment. Under provisions of this order, the well need never be reopened but the allowable would remain the same. However, in a later order, provision was made for transferring the allowables of wells producing 100 barrels of water or more. In that order, a provision requires retests of these wells at intervals of six months, and presumably the allowable transferred would be declined accordingly.

Thus under one transfer order, semi-annual tests are required, and under the other, no tests at all were needed.

Since the first order was entered because no pumping equipment was available, it seems that the only solution for the commission is to exempt all wells from these tests and "freeze" the allowables as they were at the time of transfer.

Arkansas Hearing on Adequacy of Gas Supply

The Arkansas Oil and Gas Commission has been requested by PAW to hold a hearing on the Dorcheat and Macedonia fields, of Columbia County, and the McKamie field of Lafayette County. The purpose of the hearing is to determine if there has been sufficient development in each or all three fields to supply natural gas for war plants in this area. Further, it is desired to determine, in the event that development has been insufficient, how many additional wells are necessary to adequately sustain the demand of war industries.

The commission is asking each concern operating in the fields to supply engineering data as to the producing characteristics of each well they operate, including the optimum amount of gas each well can produce daily.

The regular monthly statewide hearing will be on March 17 or 18. However, it may be that the Dorcheat, Macedonia and McKamie matter will require an extra day.

East Coast Oil Stocks Register First Increase in Many Weeks

Although daily average crude runs to stills were down 6000 barrels during the week ended February 6, refinery yields were adjusted to obtain larger quantities of gasoline, distillate and residual fuel oils. The enlarged production of residual fuel oil enabled the industry to produce more of this product than consumed for the first time since the week ended last November 28. However, the larger output of heating oil was not sufficient to prevent additional heavy drafts on distillate-fuel stocks, and the gain in gasoline production caused this commodity to continue to go into storage in large volumes.

Meanwhile, East Coast stocks of petroleum, reflecting the more drastic curtailment of consumption in the area, registered a slight gain, their first improvement in many months. As measured by the American Petroleum Institute's new index East Coast stocks of gasoline, light and heavy fuel oils available for civilian use on February 6, as compared with normal for the same date, was 34.6 in contrast with 34.5 for the week of January 30, and 41.2 on January 2, 1943.

The enlarged output of gasoline, distillate and residual fuel oil was due to adjustments in refinery yields, for crude runs to stills averaged 3,692,000 barrels daily according to figures of the American Petroleum Institute for the week ended February 6. This was 6000 barrels less than in the preceding week, and 153,000 barrels below the average of the corresponding week last year. This reduction in charges to stills occurred in the face of a 33,000-barrel per day increase in California, as other regions lowered their crude throughput rates.

Production of residual fuel oil rose 238,000 barrels during the week to a total of 7,690,000 barrels, and stocks of this product increased 332,000 barrels to 71,095,000 barrels. This was the first increase in these stocks since November 28. At this level residual fuel inventories were 18,460,000 barrels, or 20.6 percent, below a year ago. A week previous they were 19,059,000 barrels, or 21.2 percent, under the stocks of the corresponding week of 1942.

Although production of distillate fuel oil was 4,220,000 barrels, 332,000 barrels greater than in the preceding week, 1,554,000 barrels were drawn from storage. Consequently, gas oil and distillate stocks on February 6 totaled 35,503,000 barrels, which was 4,717,000 barrels, or 11.7 percent, less than a year ago. This represented a substantial decline, for only a week previous these stocks were but 3,955,000 barrels, or 9.6 percent, beneath their level at the corresponding period of 1942.

Larger production of gasoline accompanied the enlarged yields of fuel oils. The production of gasoline totaled 10,479,000 barrels, which was 140,000 barrels more than in the week ended January 30, and 1,423,000 barrels of this output went into storage. Consequently, stocks of gasoline on February 6 were 90,253 barrels. Despite the continued growth in gasoline stocks, these inventories showed improvement when compared with a year ago and a week ago, a smaller volume going to storage than in the preceding week, which reduced them further below the 1942 level. A week previous a total of 1,728,000 barrels of gasoline entered storage tanks, and stocks were then only 11.9 percent under the level of corresponding week in 1942. At the end of last week, gaso-

Crude Oil Production in the United States

(Estimates compiled by The Oil Weekly. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	*State Allowable of Crude Production	PRODUCTION IN WEEK ENDED Feb. 6	Feb. 13
Arkansas	72,671	74,950	75,700
California	780,200	753,000	770,500
Long Beach		33,300	33,450
Midway-Sunset		55,400	57,000
Kettleman Hills		42,350	45,150
Wilmington		94,100	94,300
Rest of State		527,850	540,600
Colorado		6,200	6,100
Illinois		239,350	245,750
Salem		32,050	31,000
Louden		40,150	38,850
Other New Pools		155,550	164,400
Old Pools		11,600	11,500
Indiana		15,950	17,750
Kansas	305,500	305,700	299,850
Kentucky		11,850	12,300
Louisiana	328,357	338,650	338,350
North		91,750	91,600
South		246,900	246,750
Michigan	57,800	60,750	56,650
Mississippi		53,800	57,100
Missouri		95	100
Montana		20,250	17,250
Nebraska		2,450	2,350
New Mexico	100,000	98,350	93,100
New York		14,800	13,550
Ohio		10,550	10,950
Oklahoma	365,300	349,500	352,600
Oklahoma City		59,700	63,850
Seminole Area		79,400	78,600
Rest of State		210,400	210,150
Pennsylvania		48,050	43,800
Tennessee		35	35
Texas	1,336,161	1,338,950	1,340,850
Upper Gulf Coast		319,850	319,850
East Texas Field		325,700	325,450
Rest of Eastern Texas		100,300	99,900
Lower Gulf Coast		100,600	92,400
Southwest Texas		49,250	48,550
South Central Texas		17,450	17,250
West Texas		201,150	212,850
North Texas		135,600	135,500
Panhandle		89,050	89,100
Utah		15	15
West Virginia		9,200	8,500
Wyoming		93,000	91,850
Total 8 Prorated States	3,345,989	3,319,850	3,327,600
Total United States		3,845,445	3,855,000

* Details on state allowables in The Oil Weekly of February 8, page 48.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

ITEM	Crude Oil Prod. Bbls. Day (Add 000)	Week Ended	Runs to Stills Bbls. Day (Add 000)	Week Ended	Crude Stocks Bbls. (Add 000)	Week Ended	Gasoline Stocks Bbls. (Add 000)	Week Ended	Gas Oil & Distillate Stocks Bbls. (Add 000)	Week Ended	Residual Fuel Oil Stocks Bbls. (Add 000)	Week Ended
Highs:												
1939	3,910	8- 5	3,650	10-21	278,607	5-26	87,769	4-22	39,562	10-28	116,237	8-26
1940	3,890	3-16	3,690	6-22	265,865	8-31	102,817	4-20	49,051	10-19	109,135	9-14
1941	4,337	11-22	[1]4,120	10-18	266,187	3-29	99,727	3-29	[1]54,983	11-15	102,448	1- 4
1942	[1]4,337	2- 7	3,961	1- 3	263,208	3-28	[1]107,226	3-14	49,861	11-14	95,857	1- 3
1943	3,871	1- 2	3,734	1- 2	233,938	1- 2	90,253	2- 6	42,913	1- 2	72,881	1- 2
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-12	71,152	10- 7	20,722	4-15	105,397	4- 8
1940	3,335	11-30	3,370	1- 6	237,339	1-27	79,847	11- 9	23,551	4- 6	102,344	2-10
1941	3,364	1-11	3,490	1-18	240,399	11-15	79,923	10- 4	28,381	4-12	90,914	7-12
1942	3,297	7- 4	3,393	5-23	231,896	12-12	75,934	12- 5	29,240	4-25	72,962	12-26
1943	3,821	1- 9	3,615	1-23	232,191	1- 9	82,420	1- 2	35,503	2- 6	70,763	1-30
Trends in 1942 (Week Ended):												
Jan. 3	4,038	.....	3,961	.....	244,440	.....	92,987	.....	49,357	.....	95,857	.....
Jan. 31	3,871	.....	3,848	.....	250,740	.....	97,810	.....	40,674	.....	91,189	.....
Feb. 28	4,016	.....	3,675	.....	259,373	.....	105,635	.....	34,547	.....	88,285	.....
Mar. 28	3,820	.....	3,667	.....	263,208	.....	105,624	.....	31,756	.....	83,045	.....
April 25	3,581	.....	3,506	.....	257,073	.....	102,897	.....	29,240	.....	81,107	.....
May 30	3,877	.....	3,522	.....	255,023	.....	95,355	.....	31,384	.....	79,628	.....
June 27	3,719	.....	3,581	.....	253,364	.....	88,396	.....	32,851	.....	77,304	.....
July 25	3,691	.....	3,658	.....	249,262	.....	82,281	.....	35,966	.....	77,816	.....
August 29	3,964	.....	3,697	.....	249,007	.....	80,831	.....	42,060	.....	78,034	.....
September 26	3,909	.....	3,802	.....	242,785	.....	80,550	.....	45,945	.....	78,943	.....
October 31	3,901	.....	3,731	.....	239,266	.....	79,159	.....	48,131	.....	79,166	.....
November 28	3,878	.....	3,736	.....	234,850	.....	78,854	.....	49,739	.....	77,796	.....
January 2	3,871	.....	3,734	.....	233,938	.....	82,420	.....	42,913	.....	72,881	.....
January 30	3,826	.....	3,698	.....	233,863	.....	88,830	.....	37,057	.....	70,763	.....
February 6, 1943	**3,853**	.....	**3,692**	.....	.....	.....	**90,253**	.....	**35,503**	.....	**71,095**	.....
February 7, 1942	4,337	.....	3,845	.....	[4]250,740	.....	103,173	.....	40,220	.....	89,555	.....
Change:												
In week	+27	.....	—6	.....	+130	.....	+1,423	.....	—1,554	.....	+332	.....
In year	—484	.....	—153	.....	—16,877	.....	—12,920	.....	—4,717	.....	—18,460	.....
In year	—11.1%	.....	—3.9%	.....	—6.7%	.....	—12.5%	.....	—11.7%	.....	—20.6%	.....

[1] All time peak. [2] Lowest since April, 1922. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent States. [4] Stocks, January 31, 1942.

line stocks were 12.5 percent under the 1942 level, or 12,920,000 barrels less.

Refinery-yield adjustments in the various districts reflect a number of erratic conditions.

In California, where crude runs to stills were up 33,000 barrels daily, production of gasoline rose 222,000 barrels during the week, and stocks of this commodity increased 333,000 barrels. California's production of distillate fuel was up 46,000 barrels, but these inventories were reduced by 247,000 barrels. Sending of additional crude to stills did not boost California's output of residual fuel, which declined 7000 barrels, but stocks of heavy oil rose 103,000 barrels during the week.

Most of the 1,554,000-barrel reduction in distillate fuel stocks occurred in the combined East Coast-Texas-Louisiana-Arkansas area, although the territory adjusted refinery yields to obtain greater production of this product. Charging 13,000 barrels less crude to stills per day than a week ago, this region produced 241,000 barrels less of gasoline, 208,000 barrels more distillate fuel, and 31,000 barrels less residual fuel. Stocks in the area changed as follows: Gasoline up 556,000 barrels, distillate fuel stocks down 1,020,000 barrels, and residual fuel stocks up 85,000 barrels.

Plan Plant at Calgary To Make War Products

Further contribution by Turner Valley to Canada's wartime aviation-gasoline program will be made this year, according to information contained in a year-end review of Canada's petroleum industry by G. Harrison Smith, president of Imperial Oil, Ltd. He said that plans have been drawn for a plant at Calgary, Alberta, to make blending agents from Turner Valley and refinery gases. It is expected this plant, first of its kind in Canada, will be in production this fall.

Air power, Smith said, is measured in three essentials: personnel, planes and the fuel that powers the planes. It is the petroleum industry's task to provide aviation fuels of maximum efficiency in enormously increased quantities. The industry has been able to do this primarily because of the flexibility of its refining units. It has increased the production of aviation base stocks by more than 1000 percent and has done this largely by modification of operating methods to supply the ever-increasing requirements of the Department of National Defense and Munitions and Supply.

Aviation requirements call for saturated hydrocarbons and of these the branched forms have the highest octane blending values. Within the past five years, synthesis of aviation blending agents, essentially iso-octane together with similar hydrocarbons, has attained production on a commercial scale. So far Canada has imported her requirements of blending agents to blend with the aviation base stocks produced in Canada. Plans have been drawn for a plant at Calgary to make these blending agents from Turner Valley and refinery gases. It is expected this plant, the first of its kind in Canada, will be in production this fall.

Much of the naphtha content of crude, normally available for motor gasoline, has been diverted to aviation gasoline. This motor gasoline diversion problem has been solved by enlarged throughput of the refineries, which fortunately have adequate cracking capacity, and by a modified form of cracking known as "reforming" in which the heavy naphtha not required for aviation gasoline fractions and not suitable for fuel oils is recreated into a product that distills and replaces, in the complete gasoline range, the product diverted to aviation gasoline. It has thus been possible to increase the output of motor gasoline over that of pre-war years while at the same time producing more aviation gasoline and more fuel oils. Of importance in the gasoline situation is the recent Canadian development of "suspensoid" cracking, which affords approximately an 8-point improvement in octane rating over usual thermal-cracking process.

Western Canada Loses Supply from Montana

Drying up of oil supplies from Montana, because of declining yields in Montana fields and United States war requirements, is fast creating a critical shortage on the Canadian prairies.

For many months past, Alberta oil production has been supplemented by Montana oil imports to meet the heavy demands for petroleum products in Alberta and Saskatchewan.

According to a report from Lethbridge, efforts are being made to open up new sources of oil on the Southern Alberta plains as offsets to Montana imports no longer obtainable in sufficient quantity.

Two wells, Hi-Test and Noble, are drilling in the Taber field. Imperial Oil, Ltd., has wells under way in the Vauxhall field, north of Taber, and on the Blood Reserve; and Standard Oil Company of British Columbia has a well near the potential producing horizon on the Ross Lake structure, south of Magrath.

An eight-well drilling program in the Taber field by Barnwell-Taber-Nassau Exploration groups has been announced and it is known that the Paragon (Ruben-Zandmer) is planning an important drilling program.

Improvements have been made to the Huff refinery at Lethbridge, which takes crude from Standard Oil Company of British Columbia's well at Taber, largest in Canada outside Turner Valley.

Will Build Gasoline Plant at Lisbon

Claiborne Gasoline Company has authorized erection of a 50,000,000-foot daily capacity well-pressure absorption type natural-gasoline plant in the Lisbon field, Claiborne Parish, Louisiana. The company has made long-term contract with Big West Drilling Company to deliver a minimum of 35,000,000 feet of gas daily and to drill necessary additional wells to fill gas sales contract. The residue gas from the plant will be sold to Ozark Ordnance Plant, near El Dorado, Arkansas, with deliveries to be made through Arkansas Pipe Line Company's system. Surplus residue gas will be sold to Memphis Natural Gas Company, which will use Arkansas Pipe Line Company's line to its Monroe station.

Claiborne Gasoline Company is owned largely by M. H. Marr, J. H. Pritchard and W. J. Holderman.

Humble Report Reviews Contribution to War Effort

Humble Oil & Refining Company is accounting for more than 10 percent of the total output in the manufacture of critical petroleum war products in the United States and more than 20 percent of the total output on the Texas Gulf Coast, Harry C. Wiess, president, reported to stockholders February 8.

Without giving the location or listing actual production figures, the report said one of the company's refineries contributes by far the largest amount of critical petroleum war products supplied by any plant in the world.

The company's gross crude production in 1942 was 68,912,000 barrels, an increase of 1,500,000 barrels, or 2 percent over 1941. Net production in 1942 was 56,265,000 barrels, or a daily average of 154,000 barrels, compared with 150,000 barrels daily in 1941. At the end of the year the company was operating 7930 oil and gas wells, an increase of 160 during the year. The company has an interest in 715 wells operated by others.

Drilling operations continued the downward trend of recent years, the reduction due in part to shortage of steel and new federal regulations. The company completed 365 wells in 1942, a reduction of 224 wells or 38 percent from the 1941 figure.

Other highlights of the report:

The company's eight natural-gasoline plants processed approximately 29 billion cubic feet of gas in 1942.

Exploration work was carried on at the the same level as in the two previous years.

The company purchased 218,000 barrels daily in 1942 compared with 251,500 barrels daily in 1941.

Humble Pipe Line Company suffered a substantial decline in volume and revenue.

Cut in Oklahoma Oil Production Tax Seen

The Oklahoma oil production tax may be reduced if a suggestion made by Ray O. Weems, vice chairman of the Oklahoma Corporation Commission, is followed. Weems announced February 8 his belief that the one eighth of one cent per barrel tax on oil can be reduced to one tenth during the next biennium.

Such a reduction would be based upon the fact that the commission has a reserve of $125,000 in the state treasury, and even though production might go steadily down during the next two years the commission could continue to operate efficiently. The reduction would mean an annual saving in excess of $25,000 to producers.

Weems said an enlarged engineering staff should be provided to handle the expanding natural-gas program. He indicated the legislature will be asked to make this provision.

The changes being considered and the suggestions offered by Weems follow a two-month study.

Texas Extends Compact Membership Four Years

The Texas Legislature has passed, and sent to the Governor for signature, the bill extending for four years, Texas' participation in Interstate Oil Compact.

SAFE WAYS IN WAR PRODUCTION

NEW WORKER—Every new employee in a Bethlehem Plant wears this button. It helps to fix his attention on safety. It signals to more experienced employees that he is new to the plant, and they keep an eye on him, and do not hesitate to offer friendly guidance in case he forgets instructions and unknowingly breaks any safety regulation.

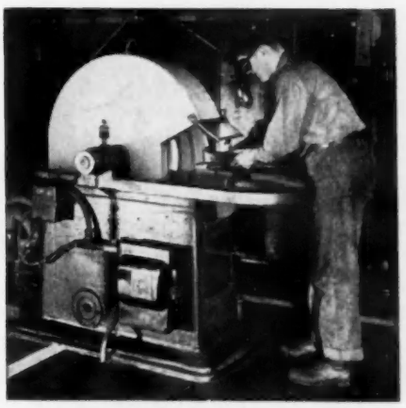
Industrial accidents, bad enough because of the human distress they cause, are also a grievous drag on production. Every day that injury lays up a worker means lowered output of the materials our armed forces are asking for.

Safety engineers know they must be more than ever on guard as pressure for production intensifies and men work against time. When war came, Bethlehem Steel Company expanded its accident-prevention program to meet the new conditions. Special efforts were addressed to the new employee to make him safety-conscious from the moment he walked into the plant. And by posters, group meetings and individual instruction, the safe way of doing his job was ground into the subconscious of new Bethlehem employee and veteran alike.

Significant are the results of a current study, showing that of all disabling accidents to Bethlehem employees less than one-third occur in the course of their work. Even with employment rolls upped by the tens of thousands and plant operations at top speed to meet the demands of the war program, the Bethlehem employee is safest, best protected against injury, during the hours he spends on the job.

AUTOMATIC HAND GUARD—This man is operating a trimming press. If he should absent-mindedly let his hands move too near the danger zone, the two cables will automatically whisk them back to safety, before the ram of the press descends.

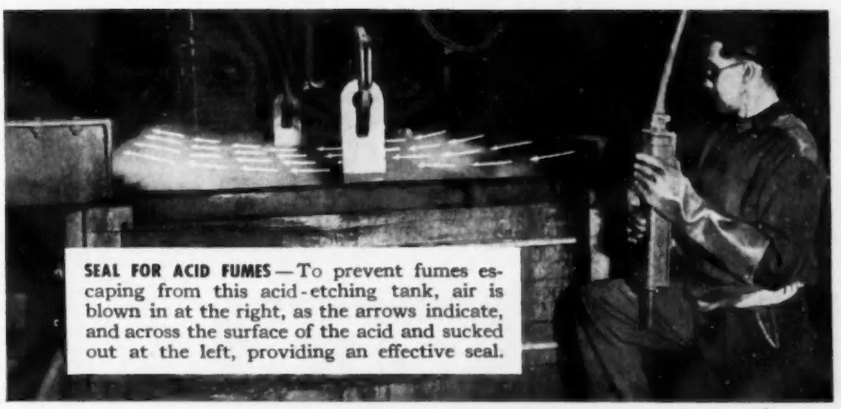
100% HEAT-INSULATED—Asbestos-covered hood, chrome-leather full-length apron, chrome-leather gloves, chrome-leather full-length sleeves and asbestos guard on torch handle give this worker complete protection against heat and flying sparks.



EYES DOUBLY GUARDED—Even though this grinder is equipped with a heavy glass shield, the eyes of the man who is operating it are given further protection against sparks or flying bits of abrasive by the cup goggles that he is wearing.

BETHLEHEM STEEL

Bethlehem Steel Company is actively supporting the National Safety Council in its campaign against accidents in war production, through the War Production Fund to Conserve Manpower.



SEAL FOR ACID FUMES—To prevent fumes escaping from this acid-etching tank, air is blown in at the right, as the arrows indicate, and across the surface of the acid and sucked out at the left, providing an effective seal.

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Our fighting men have confidence that the "soldiers of production" will do their part back home. Let's justify the confidence they are placing in us . . . every day, every hour . . . till the war is won!

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Completions Continue Far Behind Last Year; Some Wildcats Have Encouraging Showings

California has three good prospects for production, one of them looking exceptionally good. The Navy has begun looking for its own fuel on Reserve lands, with Standard Oil Company as its drilling contractor.

The United States government has been looking for some minerals in Utah, using a drilling rig, and a probable oil strike has resulted. Otherwise in the Mountain area the weather is so cold that operations practically have been stopped.

Michigan had small successes with one oil and one gas strike, but other wildcats watched with hopeful interest have proven disappointing.

In North Louisiana, the second completion at North Carterville is much better than the discovery. Other results in the area were not so encouraging.

The Texas Gulf Coast has a new oil field at Hall's Bayou in Brazoria County, in a hole that started out to be a deep one but finally completed at 10,000 feet. Depth interest shifts to Old Ocean in the same county, where the record may be set. Nobody is writing home about developments on the Louisiana end for the Coast, while lower down in the Texas end Wilcox wildcat prospects still hold major interest.

Hildreth pool in North Texas has a new well producing from a stratum passed up by previous drilling.

Completion of 284 wells reported for the United States for the week ended February 13, brings the total of wells drilled this year to 2265, which is far under the 3716 completions during the comparable period last year. Forty-eight wildcat wells were completed during the week, including 7 oil discoveries and 3 that made gas. By coincidence, total wells completed this week were the same as for the week previous.

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Illinois Basin

To Test Osage Sand First Time in Illinois

Magnolia Petroleum Company is to test Osage sand for first time in Roaches field, Jefferson County. White County pool opener put on pump after swabbing 4 barrels an hour natural from Benoist sand. New Devonian producer in the Boulder field, Clinton County, flows 316 barrels of oil in 14 hours. Completion of Christian County Devonian discovery delayed.

Jefferson County: Magnolia Petroleum Company was setting casing at Schulick 1, NE NW SW 22-2s-1e, preparatory to testing saturation at 2640-57 feet in Osage sand. Schulick 1 was drilled into a dry Devonian lime at 3840 feet but was plugged back to the Osage which so far is not productive in Illinois. The well formerly bottomed in Benoist sand, the field's producing horizon.

White County: N. V. Duncan's Metcalf 1, SW SW SE 31-3s-14w, 2½ miles southwest of Grayville, swabbed 4 barrels of oil an hour natural from Benoist sand at 2815-26 feet and was being put on pump. Duncan has staked location for G. D. Calvin 1, NE SE SW 31-3s-13w, a northwest offset to the discovery.

Clinton County: The Texas Company's Murphy 5, C SW NW 2-2n-2w, newest Devonian producer in the Boulder field, was completed with an initial 14-hour flow of 316 barrels. Pay is at 2616-19 feet.

The second Devonian well in the South Bartelso field, The Texas Company's Suhl 1, C SE NE 20-1n-3w, swabbed but 1 barrel of oil an hour.

Christian County: Completion of W. H. Marlow's Ralph 1, SE NE NE 27-15n-2w, first oil well in the county, was delayed when tubing parted as preparations were being made to acidize the well, showing for a small producer from Devonian lime at 1905-08 feet.

Williamson County: The county's only operation, Superior Oil Company's Rogers-Harris 1, a wildcat in NE SW NW 24-8s-3e, has been abandoned at 2895 feet in McClosky lime.

Franklin County: Sun Oil Company's Old Ben Coal Co. 1-C, a wildcat in NW NE NW 14-6s-1e, was abandoned at 2881 feet. McClosky ilme, deepest formation explored, carried water.

Richland County: The Pure Oil Company's Earnst 1, N½ fraction NW 31-3n-9e, a wildcat 1 mile southwest of the South Noble field, was testing but is expected to make only a very light producer at best. It is producing from McClosky lime at 2990-93 feet.

Perry County: The Texas Company's MaTlavish 1, NW SW NE 36-4s-2w, a wildcat near Tamaroa, was coring Devonian lime from 2840 feet. It was reported that shallow formations were dry.

Two new oil pools were discovered and three developed fields were extended in Illinois during January, according to the monthly report of the State Geological Survey.

Belle River, in Jefferson County, and Covington South, in Wayne County, were the new pools. The production limits of the Sims North, (Wayne) Phillipstown, (White) and Mt. Carmel West (Wabash) pools were extended.

The estimated January yield was 7,451,000 barrels as compared to December production of 7,630,000 barrels.

In January, 84 of 141 wells were completed as producers while in December 112 of 181 completions were successful.

Indiana

Gibson County: Superior Oil Company's Thompson 1, NW SE NW 25-2s-12w, wildcat 2½ miles north of Owensville, 5 miles from nearest production, has set casing to test saturation in McClosky at 2411-17 feet, which on drill-stem test showed 1750 feet in one hour.

Posey County: Tran-Tex Producing Company and Cherry-Kidd's Mumford Farms 1, NW NW SW 32-3s13w, northeast of Griffin, was drilling plug to test Cypress saturation at 2420-38 feet.

Kentucky

Henderson County: A. W. Cherry, Barron Kidd and Frontier Oil Company's W. Lilly 1, SW NE SW 23-Q-21, projected extension ½ mile north of Smith Mills pool, set casing to test McClosky pay at 2627-36 and 2640-50 feet, which showed 750 feet of oil in 1-hour drill-stem test. Same operator's Dorsey 1, NW NE SW 18-Q-21, 1 mile north of Smith Mills pool, was drilling at 1000 feet. Three miles south of Smith Mills pool, muddy roads have delayed completion of Miller & Shiarella's Willett 1, SE SE SE 16-P-21, prospective pool opener.

Oklahoma

Coal County Well Shows Good Saturation

Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Cushing Royalty 1, NW NE SE 22-3n-9e, Coal County, 7 miles northeast of Centrahoma structure, one of Southern Oklahoma's most prominent structural features had gas in Cromwell sand at 3525-3535 feet, showing good saturation also when drilled on to 3570 feet.

Pottawatomie County: West of Avoca field, Mid-Continent Petroleum Corporation's Rich 1, SE NE NE 1-6-3e, west offset to production, drilled to good saturation in Viola lime at 4303 feet. Three cores showed varied staining and saturation after topping lime 1 foot

higher than in the first location east. Casing has been run past first shows to test lower section and pipe may be perforated if lower section fails to produce.

Tillman County: Kerlyn Oil Company's Hinson 1, NE SE SE 33-2s-17w, wildcat, found Arbuckle lime dry and has been testing 10 to 25 barrels daily from Cisco and Canyon limes, with testing incomplete.

Kansas

Sheridan County Wildcat Has Kansas City-Lansing

Union Oil Company of California's Pratt 1, NW NE SW 23-8s-26w, Sheridan County, considerably off trend wildcat northwest of Central Kansas Uplift development, has recovered Kansas City-Lansing lime with good saturation between 3710-3716 and from 3725-3729 feet.

Phillips County: Cities Service Oil Company's Hansen 1-D, SWc SE 14-5s-20w, 3 miles east and north of Ray pool, received state potential of 1626 barrels daily from Lansing-Kansas City after 2000 gallons of acid through perforations at 3292-3331 feet. This is a probable major extension to Ray, although it could be classified as new field.

Barton County: Initial showing in Transwestern Oil Company's Depiesse 1, C SL SW SE 6-16-12w, near Feltes production, is showing as a possible discovery in Topeka lime after failing on test of both Kansas City-Lansing and Arbuckle dolomite. It made initial test of 5 barrels hourly from the lime at 2876-2881 feet, after 1000 gallons acid.

Cowley County: E. E. Wakefield's O'Neil 1, C NE NE 27-32-3e, which showed as a probable pool opener in Arbuckle lime when it made 11 barrels hourly from 3440-3444 feet, continues to make oil but with water content increasing. Testing is incomplete.

West Texas

Pecos County Wildcat Making Gas from Permian

Pecos County wildcat to complete as gasser. Trio of deep prospects in Winkler County have negotiated Devonian chert, with one test registering unusual displacement.

Winkler County: Magnolia Petroleum Company's State-Walton 20, between Kermit and Keystone fields, was drilling at 9170 feet in lime, having tested 330 feet of gas-cut mud at 8885-8990 feet and show of gas with 8730 feet of salt water at 8975-9062 feet in Silurian, topped at 8835 feet, elevation 2934 feet. This scheduled Ellenburger test logged 1215 feet of Devonian, while Amon G. Carter's Walton-Pure 2-C, situated 3½ miles to the east and on the Keystone structure, recorded only 120 feet of Devonian, topped at 7321 feet, elevation 2955 feet, with nominal oil and gas shows on drill-stem tests at intervals from Silurian in drilling to 8350 feet. Shell Oil Company's Blue 1, near east edge of county, was drilling 9065 feet in lime, tentatively identified as Silurian.

Pecos County: Anderson-Prichard Oil Corporation's Masterson-Humble 1-A, 3½ miles south by east of Apco deep area, has mudded off estimated flow of 20,000,000 feet of gas with some water and may run pipe to complete. This wildcat blew out recently after drilling to granite at 4564 feet without encountering Ordovician. Gas production is credited with coming from Permian at 4160-95 feet. Magnolia Petroleum Company's Eaton 1-29, 5 miles southwest of Abell field, entered green and brown shale at 5755 feet, and was drilling chert at 6140 feet.

Sterling County: Ohio Oil Company's Clark 1, 9 miles southeast of an 8117-foot Ellenburger failure, was drilling dry dolomite and chert at 8120 feet in Ellenburger, topped near 7700-foot level, elevation 2249 feet, estimated 310 feet high. Col-Tex Refining Company's Reed 1, 15 miles northwest of Sterling City, was drilling Permian at 7410 feet.

Andrews County: DeKalb Agricultural Association's Means 1, 3 miles southwest of Means field and on a deeper-seated structure, was checking for possible casing leak after filling 2500 feet with salt water with nominal show of oil and gas when plugs were drilled from 5½-inch at 4848 feet. The hole is bottomed at 4885 feet, with maximum porosity and saturation at 4860-78 feet. Magnolia Petroleum Company's University 1-15, first deep test for Mascho-West Fuhrman area, was drilling at 5650 feet.

TARGET FOR TONIGHT

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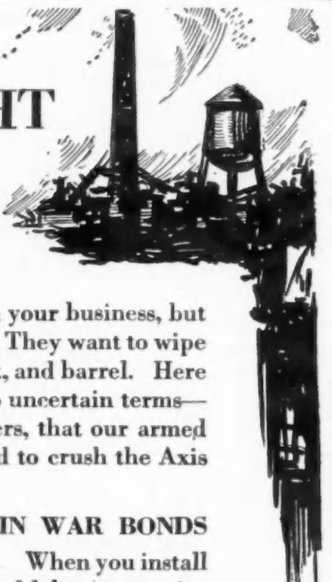

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THE OIL WEEKLY, Houston, Texas

East Texas

Steward Mill Prospect Sets Pipe to Test Gas

Fourth exploratory test on Steward Mill prospect in Freestone County, will set pipe for test of gas sands. Confirmation well for Quitman pool exceeds discovery in natural flow, and third well is in process of completion. Major extension given oil area in southwest portion of Chapel Hill structure.

Freestone County: Carter-Gragg Oil Company's Steward 1, J. James Survey, near a trio of Woodbine failures that showed sufficient gas to encourage continued explorations on the Steward Mill prospect, is to set pipe to test possible gas production in Woodbine sand entered at 3980 feet. This wildcat is bottomed in water sand at 4048 feet.

Wood County: Shell Oil Company's Goldsmith 1, south offset to the Quitman pool discovery, flowed 734 barrels of 42.7-gravity oil, gas-oil ratio 189/1, on potential gauge through ¼-inch choke. Production is from Paluxy perforations at 6282-6304 and 6256-76 feet. The company's Blalock 1, north offset to the discovery, entered Paluxy at 6280 feet, elevation 459 feet, and logged oil sand at intervals before reaching water at 6366-84 feet. Pipe will be set through the oil zone to complete through perforations. Delta Drilling Company et al's Blalock 1, deepest of the other three active tests, was drilling at 5670 feet in Georgetown, topped at 5090 feet, elevation 462 feet.

Bobby Manziel et al's Bailey 1, Samuel Burch Survey, 7 miles southwest of Winnsboro, was rigging up to explore a Wood County Paluxy prospect. Amerada Petroleum Corporation has been given permit for its previously announced Travis Peak test for the east flank of the Coke field.

Hunt County: Humble Oil & Refining Company's Graham 1, ½ mile west of 7 Woodbine producers in the Wieland pool, will attempt to drill to the Smackover zone. Group of tests drilled within the past two years along this general fault trend failed to reach their objective because of entering schist. In the Campbell area, J. S. Morrissey Company awarded drilling contract for immediate drilling of Paluxy test on Rollins 554-acre tract, Joseph Heller Survey. The faulted structure has been outlined by subsurface, soil analysis and geophysics.

Smith County: Sinclair Prairie Oil Company's Connally 1, northeast portion of Jacob Herrin Survey, opened a large territory for oil development on the southwest flank of the Chapel Hill structure in flowing 228 barrels in 22 hours through open tubing after using 5000 gallons of acid in three Pettit zones between 8105 and 8327 feet, with dry Travis Peak at 8337-44 feet. The well flowed 95 barrels with gas-oil ratio of 359/1 through ¼-inch on official potential. It is 1½ miles south by east of nearest production, and the company holds lease on the bulk of the nearby acreage.

When you wash down your pipe in freezing weather, a slippery film of ice forms on its surface. Then, when you run the string back into the hole, trouble starts. Your slips won't securely grip the ice-girdled pipe. You are liable to drop the pipe.

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North Texas

Hildreth Pool Well Producing Shallower Bend

Montague County pool gains shallower oil zone through completion of one of largest natural producers in district. Plugged-back wildcat in Jack County showing high-pressure gas from Bend. Second producer indicated for detrital area in Archer County.

Montague County: Continental Oil Company's Hildreth 1-A, southwest offset to its Hildreth pool discovery in the 7200-foot Simpson, made potential of 4504 barrels of 40.6-gravity oil and 3,527,000 feet of gas, based upon 6-hour natural flow through 1-inch. Production is from sand at 5992-6005 feet and from conglomerate at 6061-6106 feet in Bend, topped at 6005 feet, 19 feet low. The discovery for this area passed up promising production in Bend conglomerate, which has accounted for a small producer and an offset failure in the Gant-Turner pool, situated 1½ miles to the southwest.

Jack County: Shell Oil Company's Wolfe 1, SE SE TE&L 3341, 3½ miles southeast of Jermyn, rated as probable gasser in making preliminary test of Bend, topped at 4342 feet. This wildcat yielding water in testing Ellenburger at 5582-5631 feet, with 4½-inch at 5586 feet. Hole was plugged back and pipe perforated with two shots at 4450 feet, resulting in 1800 feet of rotary mud with strong gas flow within two hours. Tubing pressure stepped up to 1300 pounds before the well was killed to resume perforation of pipe.

Archer County: Belfort Oil Company's Kemp & Kempner-Texaco 1, northeast offset to the Cooper pool discovery, prepared to complete through perforations in oil saturation in detrital at 4893-4910 feet, having found Ellenburger barren at 5015-70 feet.

Failures: Magnolia Petroleum Company's Brewer 14, ½-mile northeast of Electra, and near shallow stripper production, proved dry in Ellenburger at 3507-3839 feet. In Clay County, L. T. Burns et al's Phillips 1, west outpost for the Burns-Browning two-pay area, quit in Mississippi at 5695-5761 feet.

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Southwest Texas

Wilcox Wildcat Wells Still Hold Major Interest

Although there has not been a major discovery this year along the Wilcox trend, producers still continue to center their main interest on development in this area. A number of wildcats are drilling or completing in the Wilcox sand while several other tests are being planned for immediate drilling. The area that is being explored for production in the Wilcox is the Goliad-Karnes-Bee County belt. This particular territory was regarded as "cold" prior to 1942, but it is drawing more attention since the sand is found at comparatively shallow depths and since several wells have indicated opening of new fields. Intensive drilling in this particular area only awaits discovery of what is known as an "elephant" field. With geophysical and drilling moving ahead at a fairly rapid pace, producers hope this major discovery is in the offing.

Atlantic Refining Company and Continental Oil Company are completing a Wilcox sand discovery in the Cabeza Creek area of Goliad County. So far the well, Pettus 1, has shown only gas and distillate from perforations at 7743-60 feet. Located 12 miles northwest of Goliad in Sebastiano Vela survey, the well flowed estimated 19,000,000 cubic feet of gas and ungauged amount of distillate through ⅛-inch, 3/16-inch, and ¼-inch chokes. Wilcox was topped at 7325 feet, total depth being 8978 feet with 5½-inch casing set to 8530 feet. This well, already considered the discovery of a new field, is two miles northeast of the old shallow Pettus-sand discovery in the Ybaro grant.

Karnes County: American Liberty Oil Company is testing a Wilcox discovery in the Burnell area, flowing gas and distillate. Located in the extreme southern portion of Karnes County on a 204-acre lease in James Johnson survey, Abstract 164, the well was last perforated at 6743-50 feet and flowed a large volume of gas with spray of distillate through 3/16-inch choke. Perforations were made at 6994-7008 feet, 6945-49 feet, and 6944-46 feet, all showing salt water. A sand showing gas was logged at 6610-40 feet.

Phillips Petroleum Company is testing a Wilcox well four miles southeast of Kenedy in Karnes County, although tests so far have failed to show for production despite a successful drill-stem test while drilling. The well, Reasoner 1, showed salt water after it was acidized with 500 gallons of mud acid. On a drill-stem test in open hole before casing was set the well recovered 600 feet of 47.5-gravity oil. Hole is bottomed at 8163 feet with 5½-inch casing set to 6650 feet. The well, bottomed at 8163 feet, is in Carlos Martinez grant.

Wildcat: Dan Auld, San Antonio, is due to start drilling soon on an 8000-foot Wilcox wildcat on a Humble Oil & Refining Company farmout six miles south of Runge in Karnes County. Location is on a 128-acre tract in northwest portion of Victor Blanco grant, Abstract 3. Several companies are interested in this venture with Transwestern Oil Company, Humble Oil & Refining Company, Superior Oil Company and Tide Water Associated Oil Company holding contiguous acreage or supporting the operation.

Jackson County: Drilling in the Jackson area, the hottest area for development in 1942, shows no immediate signs of a slump with more tests being planned. W. Stewart Boyle is preparing to drill Levy 1, 1½ miles north of Ganado field. The wildcat, projected to 6000 feet, is spotted on north 160 acres of Morris & Cummings Survey 5.

Texas Gulf Coast

Hall's Bayou, Brazoria County, Is New Oil Field

After being leased up for several years and having been worked geophysically by several companies, the Hall's Bayou area in Brazoria County has been opened to production, thus setting the pace as the first actual field discovery of 1943. The discovery has been more than five months in process of drilling. Thus, this strike may mark a renewal of interest in Frio sand development below the 10,000-foot horizon.

Brazoria County: Humble Oil & Refining Company is completing Houston Farms Development Company 1, deep

A reminder to check the Trading Post Section on page 56.

wildcat at Hall's Bayou. Originally scheduled to drill to 14,000 feet, this objective was not reached due to mechanical troubles. This would have been the deepest well east of the Rocky Mountains if the 14,000-foot level had been tapped.

On initial gauge the well flowed at rate of 15.45 barrels of 42.5-gravity oil hourly from perforations in the Frio sand at 10,258-280 feet. Tubing pressure was 6000 pounds with gas-oil ratio of 8900-1. Frio sand was topped at 10,132 feet and first total depth was 13,253 feet, but later was plugged back to 10,035 feet, sidetracked and redrilled to 10,918 feet, and 5½-inch casing was set to this level for testing.

The discovery is on a 5000-acre tract in Perry & Austin Survey, Section 2, Abstract 109. It is 1½ miles southwest of Strake Petroleum Corporation's Lena Griffith 1, wildcat drilled to 10,410 feet early in 1941, which showed some oil but operators were unable to complete due to mechanical difficulties.

Deep Test: Abercrombie Oil Company and Magnolia Petroleum Company have set a depth record on the coast at Old Ocean, where McDonald 1-B, in Battle, Berry and Williams Survey, is drilling below 13,548 feet and is only a few hundred feet short of the 13,728-foot record depth held by a well at Agua Dulce in Nueces County. Although operators have not definitely set a specific depth for the new test, it is reported it will be carried to 14,000 feet or maybe deeper.

Katy Area: Humble Oil & Refining Company has spudded a wildcat north of Katy field, Waller County. This well, located 4000 feet east of Stanolind Oil & Gas Company's Pattison 1 extension, is in H&TC 113.

Harris County: Cities Service Oil Company has spotted a 9000-foot wildcat in the Alief area, Witcher 1, on a 696-acre tract in Block 6, Mrs. Chris Williams Survey. The test will be unusually interesting since it is 3716 feet northeast of Pure Oil Company's Albanese 1, considered the discovery of the Alief gas-distillate field.

Colorado County: Cities Service Oil Company is continuing tests in Frank Stephens 1, wildcat discovery of new Wilcox sand field on Ramsey prospect. Last perforations were made at 8960-70 feet and flowed 3,800,000 cubic feet of gas and 88 barrels of distillate through ¼-inch choke, with 2760 pounds tubing pressure. It is understood that new perforations are to be made at 8948-60 feet, which indicated production on log.

South Louisiana

Distillate Production Dominates Prospects

Gas and distillate well developments dominated the drilling spotlight in the coastal belt last week. There were no major discoveries although one wildcat has indicated the opening of a new distillate reserve and possibly oil. A second well, considered a semi-wildcat, has been completed as a distillate producer from the deeper sands.

St. Landry Parish: Sun Oil Company is preparing to make first flow test in Burleigh Pool 1, wildcat on Shuteston prospect in 37-7s-4e. Drilled to 11,505 feet, 7-inch casing was run. Although details have not been announced, the well is credited with picking up a gas sand at 10,004-021 feet and a sand showing oil around 10,301 feet. Top of cement is 10,738 feet.

Calcasieu Parish: Gulf Refining Company is completing Amoskeag Savings Bank 1, wildcat in 18-11s-5w, Hayes area. The well is northwest of what is considered the field discovery well. The Amoskeag test flowed considerable gas along with 24.7 barrels of distillate through ⅛-inch choke with 4075 pounds pressure on tubing, casing sealed. Total depth is 11,960 feet with 7-inch casing set to 11,916 feet.

Evangeline Parish: Interest on developments on the northwest edge of Ville Platte field is accentuated with an extension well completed while another is preparing to drill. Continental Oil Company has extended the field northwestward with Jaubert Bros. 1 flowing 123 barrels of 53.2-gravity oil through 10/64-inch choke. Perforations were made at 10,132-161 feet in Wilcox. Total depth of this producer is 10,290 feet with 6-inch casing set to 10,290 feet. Location is in 26-3s-2e.

Vermilion Parish: Humble Oil & Refining Company is due to make potential on its discovery in the Pecan Island area. Louisiana Land and Fur 1, 34-16s-1e, was perforated in the 10,850-foot horizon and flowed a large amount of gas with 47 barrels of distillate daily through 5/32-inch choke with 4000 pounds pressure on tubing and gas-oil ratio of 50,000-1.

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North Louisiana

North Carterville Well Flows 35 Barrels Hour

Official gauge at Hunt Oil Company's Nebo 2, SW SW 3-23n-12w, in North Carterville, Bossier Parish, had not been made but the well flowed estimated 35 barrels an hour through open tubing from perforations at intervals from 6064 feet to 6146 feet in Pettit lime zone. Pressure on tubing showed 125 pounds and casing pressure showed 350 pounds. Nebo 2 bottomed at 6543 feet. Cores at 6068-6183 feet established Pettit zone and 7-inch casing was set at 6260 feet. The company's Nebo 1, SW SE 3-23n-12w, discovery well at North Carterville completed last November, drilled to 6386 feet, flow was estimated at 230 barrels of 30-gravity oil in 24 hours through ¼-inch choke through Pettit lime perforations at 6029-6122 feet.

North Carterville is 3 miles north of the old shallow Carterville-Sarepta field which reached its peak of production of ¾ million barrels in 1930 from shallow Blossom and Tokio horizons. A few pumpers are still operating at Carterville-Sarepta. Hunt Oil Company has two tests also nearing Pettit lime pay zone in the area.

Caddo Parish: A Pettit lime wildcat, Harris & Owens' Fuller 1, SE NE 4-22n-15w, is idle at 6000 feet pending decision of operators of deepening to Travis Peak. Fuller is 20 miles southwest of North Carterville activities, midway between the Rodessa and Hosston fields, and near Mira.

LaSalle Parish: Carter Oil Company and Phillips Petroleum Company have abandoned Highland Farms A-1 (formerly Highland Farms 2) at 5105 feet. This is the fourth dry hole for Cypress Bayou out of six Wilcox prospects drilled in this field discovered in 1941. Two wells have been in production during this time. Carter-Phillips' Louisiana Delta 2, NW SE 12-6n-4e, a lone well now pumping, produces approximately 100 barrels per day from Wilcox. Presently, no subsequent development is expected at Cypress Bayou.

Five miles west of Cypress Bayou, Carter Oil Company and Phillips Petroleum Company are drilling Catahoula Lake C-3, SE SW 6-6n-4e. This is a Wilcox prospect drilling below the lake bed in the Catahoula Lake field discovered in 1942.

Arkansas

Wildcat Test Drilling in Central Ouachita County

Jack Carnes et al's Berg 1, SW NE 6-14s-17w, Ouachita County, a Smackover lime wildcat and the first venture in central Ouachita County since 1936, when Tide Water Associated Oil Company quit Graves 1, 33-13s-17w, is attempting to dislodge equipment stuck at 600 feet in the hole when operators halted drilling for core test at 4092 feet.

Ten miles southwest, and to offset 2800-foot Tokio and 3600-foot Travis Peak production in the Smart field, Grady Vaughn has spudded Haltom 1, SE SW 6-15s-19w, proposing to explore deep Smackover lime. Production from that horizon would give this field three pay zones.

One mile south of Grady Vaughn's deep test, Crow Drilling Company bottomed Wesley A-1, NW SW 7-15s-19w, at 4000 feet and perforated a Travis Peak section at 3448-55 feet, for 300 barrels on pump. Crow Drilling Company is to abandon Wesley B-1, SW NE NE 10-15s-20w, west edge of Smart field.

At Garland in Miller County where 9 wells averaging 26 barrels of oil per day each and are pumping from Paluxy at 3000 feet, Magnolia Petroleum Company is drilling below surface pipe at Olivet A 9, NE NE 4-16s-26w, projected to 7800 feet or to the Smackover lime. Six miles west, Barnsdall Oil Company's Grace 1, SE NW 4-15s-27w, Miller County wildcat is drilling ahead below 4800 feet and will explore Cotton Valley and the Smackover lime.

Lafayette County: Offsetting to the north the deep Pettit lime production of North Carterville of Bossier Parish, W. G. Ray is drilling Warnock-LeCroy 1, SW SW 3-20s-24w.

At Midway, Southwood Oil Company is preparing to abandon Hodnett 8, NE SE 18-15s-23w, drilled to 6598 feet. This evidently defines Midway field at the southeast.

Union County: Fohs Oil Company et al's Grace 1, NW SE 31-17s-14w, wildcat offsetting Nick Springs Travis Peak production, is making final tests in the Cotton Valley, swabbing from perforations at 4790-93 feet in an endeavor to cut down water flow which is estimated to be approximately 50 percent oil. Tests in lower Cotton Valley showed salt water, gas and oil. A drill-stem test from Smackover lime at 6700-10 feet recovered salt water. Total depth is 4810 feet.

Michigan

Wildcats in Clare and Saginaw Counties Produce

Wildcat completions include gas and oil discovery but other closely watched exploratory tests bring disappointment.

Wexford County: Freeman Oil Company's Lindstrom 1, S½ SW NW 23-21n-9w, Clam Lake Township, logged Dundee lime at 3950 feet and carried a show of oil at 3952 feet with blackwater at 3960 feet. Operators plan to case off water and drill another 200 to 400 feet to test upper Monroe.

Clare County: Gulf Refining Company's Omans 1, C NW NW 8-17n-4w, Grant Township, logged Sylvania objective at 5415 feet with a drill-stem test at 5540 feet showing 4550 feet of salt water. It will be abandoned.

Pure Oil Company shut down for orders on Thompson 1, N½ NW SE 3-20n-3w, deepest test on south flank of Headquarters pool, with salt water at 5651 feet in unclassified formation. This company abandoned Nearhood 1, Section 33-20n-6w, second deep test in Winterfield pool. It was acidized with 1000 gallons in Richfield section of Monroe at 5020 feet but averaged less than 4

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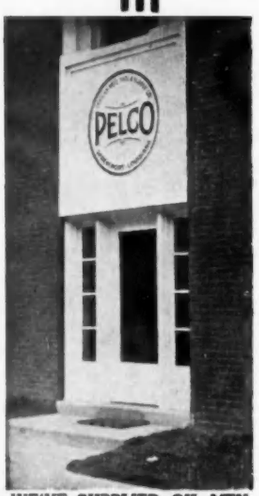

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barrels of oil on pump. The first deep well, McClain 1, Section 30-20n-6w, was completed last fall in the same horizon for 215 barrels per day.

Taggart Brothers Company's Mills 1, C NE 2-20n-6w, Winterfield Township, completed for 3,650,000 feet of gas in Michigan Stray sand for new field discovery in shallow horizon above Marshall at 1288 feet, chief gas producing beds in Michigan. The well is four miles northeast of a developed oil-gas field in same township.

Osceola County: Ohio Oil Company is drilling ahead on Zimmerman 1, S½ NE SE, Section 28-18n-9w, Cedar Township, having temporarily passed up a Traverse lime pay at 3247 feet. Well flowed 25 barrels oil and carried 2000 feet of oil when drilling was resumed. Test will be carried to Dundee and Monroe horizons.

Saginaw County: H. C. Nelson completed Butain 1, S½ NE SW 24-12n-1e, seven miles southeast of Porter field, for a 5-barrel pumper in Dundee lime at 3296 feet.

Rocky Mountain States

Government Potash Well In Utah Showing Oil

Oil shows encountered in a Utah test being drilled primarily for potash and magnesium were revealed this week. The Texas Company purchases producing properties of Ohio Oil Company in Kevin-Sunburst field, Montana. Zero weather slows Rocky Mountain activity.

Salt Valley Anticline: Encouraging showings of high-gravity oil indicating a possible discovery in the Crescent area, Salt Valley Anticline, Grand County, Utah, were revealed this week in a test drilling in CSW SE 4-22s-19e by Mack Drilling Company. This test is financed by Defense Plant Corporation, and was drilling primarily to measure thickness and determine quality of beds of magnesium and potash salts in the area. Two more tests are planned. The well went to 4200 feet and oil is reported developed from Pennsylvanian formation. Considerable secrecy has surrounded the test made for strategic materials, and though the oil shows were encountered the past fall, no public announcement was made until this week. The Potash Corporation of America is interested in the wildcat.

Kevin Sale: The Texas Company has purchased producing properties of The Ohio Oil Company in the Kevin-Sunburst field, Toole County, Montana. Purchase includes 66 wells, of which 15 are gas wells, and 45 oil wells, and 3400 proved acres of which 274 well-sites are undrilled on spacing pattern for the field. This purchase together with The Texas Company's acquisition of the former Illinois Pipe Line Company's gathering system in the field several months ago assures The Texas Company of an added supply of crude for its Sunburst, Montana, refinery with 7000 barrels daily capacity.

Zero Weather: With temperatures ranging from 0 to 40 below throughout the Rocky Mountain division, field operations are largely at a standstill. No completions were made a week ago and only two reported, both at Cut Bank, Montana, this week. This is the lowest completion record for the Rock Mountain states in an 18 months period.

California

Three Wildcats Showing Favorably; One Indicates Exceptionally Good Strike

During February, it now is almost certain, California will turn in its first 1943 contribution to the year's new oil discoveries; and indications suggest it may be of worth-while magnitude.

Three wildcats in widely separated areas are in various stages of completion, all with good showings. Most important of the trio, because of indicated richness and depth of oil sand section and because it would represent a field discovery, is Standard Oil Company's Fresno County project, Pleasant Valley Farms 82-29F, in the Guijarral Hills, 2½ miles from nearest production in Coalinga Nose.

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P. O. Box 2608 Houston, Texas

Russell Havenstrite's deep-zone exploration in Del Valle area, Los Angeles County. After months of selective tests that involved intricate cement jobs, this well, Barnes 2, was given a production test from its next-to-deepest zone last week. It began flowing at the reported rate of 400 barrels a day of 45-gravity oil. This will be a deep-zone discovery, being located in the Del Valle field.

The third wildcat in early stages of completion is Doheny, Batson, Los Nietos Company's Elkins 1, in Bardsdale, Ventura County, California Coastal area. While being washed with oil this well began to flow outside of the tubing. Sand difficulties were being encountered but outlook was hopeful.

Fresno County: Standard Oil Company's Pleasant Valley Farms 82-29F, 29-20-16, Guijarral Hills wildcat, on formation test at depth 9031 feet, with packer at 8927 feet, tailpiece at 9013 feet, on 4¾-hour gauge, flowed at rate of 1525 barrels a day 27.8-gravity oil, through 1-inch bean. It cored to 9090 feet, still in oil sand, but is held up by a small fishing job.

Kern County: The United States Navy this week launched its long-expected heavy-oil development program in Elk Hills Naval Reserve, announcing an initial 10 locations, 3 in 27-30-24, 2 in 2-31-24, 2 in 1-31-24 and 1 in 34-30-24. Standard Oil Company contracted to drill all of the wells and others to follow.

In the Poso Creek-Premier field, Ohio Oil Company's Midway-Premier 13, 32-27-27, staged a blowout lasting almost an hour while running casing. Pressures of such magnitude are unusual in that area. Hole is being cleaned out preparatory to completion.

In the Mountain View area, Di Giorgio Fruit Company is preparing for the start of its third wildcat, Di Giorgio 3, drilled in recent months on 7-31-30. The new try is a mile east of the second dry hole, abandoned last month.

Los Angeles County: R. E. Havenstrite's Barnes 2, 16-4-17, Del Valle area deep test, successfully tested perforated interval at 8000-8065 feet in the lower part of the Bering zone. The well gauged at the rate of 400 barrels daily, 45-gravity oil, through 24/64-inch bean, 300/1300 pounds. In all, five different pay showings were found in this well, the Bering zone being next to deepest. The bottom zone, tested some weeks ago, is wet.

Kings County: Continental Oil Company's wildcat, Drummond 2, 36-18-22, test of Hanford area, is reported to have found no encouraging showings at objective depths in drilling to present bottom of 5401 feet. Electric logging and sampling last week probably were preliminaries to abandonment.

Madera County: The Texas Company's wildcat, Gill 38-16, 16-13-16, Mendota area, which late last year gave promise of becoming a gas field discovery, probably will soon be given a production test from the zone credited with the showings. Hole had been carried to present bottom of 9050 feet without encountering any further showings.

Santa Barbara County: Doheny, Batson, Los Nietos Company's Elkins 1, Bardsdale area wildcat, flowing outside of tubing while being washed with oil, showed oil and gas with some sand and mud. Tests having developed sand difficulties, completion is being attempted with wire-wrapped liner. Hole was drilled to 5681 feet but plugged back to 4919 feet.

United States Well Completions

ARKANSAS

Columbia County—Dorcheat: Root Petroleum Co.'s Farmers Bank & Trust Co. 1, s½ sw 14-18s-22w, Cotton Valley, flow 117 bbls 68-gr distillate, 2,000,000 gas, ¼-in, tp 2560 lbs, bhp 2950 lbs, td 7980 ft.

Magnolia's Jordan Unit 1, s½ se 14-18s-22w, Cotton Valley, flow 10 bbls 60-gr distillate, 3/16-in, tp 450, cp 1300, td 8295 ft.

Columbia County — Macedonia: McAlester Fuel Oil Co. et al's Whitehead A-1, s½ se 18-18-21w, Cotton Valley, flow 40 bbls distillate, 1,000,000 gas, 12/64-in, perf 8043-85 ft, tp 500 lbs, cp 2000 lbs, td 8978 ft.

Lion's Foreman-Ford 1, n½ se 21-18s-21w, Cotton Valley, flow 12 bbls distillate, 200,000 gas, tp 200 lbs, cp 300 lbs, ½-in, td 8951 ft.

Lafayette County — Midway: Southwood's Hodnett 8, ne se 18-15s-23w, abnd 6598 ft.

Ouachita County—Smart: R. H. Crow's Hall 1, se nw 11-15s-20w, perf Tokio 2487-92 ft, pump 50 bbls, td 4010 ft.

R. H. Crow's Wesley B-1, sw sw ne 10-15s-20w, abnd 2709 ft.

CALIFORNIA

Fresno County—Coalinga old field: Shell's 121-14 328 ft s, 840 e nwc 14-19-15, pump 46 bbls 17.9-gr, 200 ft perf at intervals 1581 ft, Kreyenhagen 1660 ft, black shale 1340 ft, td 1663 ft, pd 1583 ft.

Standard's 111-35A, 2291 ft s, 1748 w nec 35-19-15, pump 42 bbls 21-gr, 149 ft perf 3157 ft, td 3195 ft, pb 3160 ft.

Standard's 63-3C, pump 94 bbls 21-gr, 176 ft perf 3331 ft, td 3333 ft.

Texas's C-3, 1160 ft n 1160 ft w sec 6-20-15, pump 128 bbls 17.6-gr, 72 ft perf 2278 ft, td 2280 ft.

Kern County—Belridge South: E. A. Parkford's 6, 233 ft s 1232 ft e 12-29-21, pump no est, 167 ft perf 1177, sanded up, top first oil sand 930 ft, td 1811 ft pd 1178 ft.

Kern County—Kern Front: General Petroleum Corp.'s Wetmore 4, 805 ft s, 250 w e¼c 14-28-27, pump 33 bbls 14-gr, 193 ft perf 1974 ft, td 2007 ft, pb 1975 ft.

General's Young 47, 235 ft s, 760 e n¼c 14-28-27, pump 11 bbls 14-gr, 25 bbls water, perf intervals 1641/1850 ft, td 2002 ft, pd 1850 ft.

Kern County—Lost Hills: Universal Consolidated's 20-D, 480 ft s, 370 w nec 30-26-21, pump 28 bbls 17.2-gr oil, 8 bbls water, 580 ft perf 1692 ft, td 1692 ft.

Kern County — Midway - Sunset: Chanslor Canfield Midway Oil Co.'s 44-9, 50 ft s, 335 w c 9-32-23, pump 39 bbls 17-gr oil, 17 bbls water, 164 ft perf 2300 ft, first oil sand 2182 ft, td 2514 ft.

Chanslor Canfield Midway's 48-9, 780 ft n, 1505 e swc 9-32-23, pump 14 bbls 15.6-gr, 206 ft perf 1450 ft, td 1510 ft.

Kern County—Mount Poso: Union Oil Co.'s S. & M. 37, 235 ft s, 60 e w¼c 4-27-28, pump 22 bbls 15.9-gr oil, 95 bbls water, 70 ft perf 1940 ft, Vedder 1871 ft, td 1941 ft.

Union Oil Co.'s S. & M. 39, 700 ft n, 60 e swc 4-27-28, pump 4 bbls net oil 15.8-gr, 75 ft perf 1984 ft, Vedder 1915 ft, td 1988 ft.

Kern County—Poso Creek-Premier: Standard Oil Co.'s 5-14, 1668 ft n, 1630 w e¼c 5-28-27, pump 51 bbls net oil 17.9-gr, 204 ft perf 2778 ft, top oil sand 2680 ft, td 2780 ft.

Standard's 10-8, 967 ft s, 1660 n nec 8-28-27, pump 92 bbls oil, 48 bbls water, 193 ft perf 2910 ft, td 2910 ft.

Kern County—Round Mountain: Honolulu Oil Corp.'s 21, 900 ft s, 1650 e nwc 18-28-29, pump 24 bbls oil 13.9-gr, 9 bbls water, 22 ft perf 2113 ft, Vedder 2095 ft, td 2116 ft.

Los Angeles County — Aliso Canyon: Tide Water Associated Oil Co.'s Porter 18, 159 ft n, 3535 w station 84 on L. A. city bndry, flow 400 bbls 25.2-gr, 48/64-in, 25/375 lbs, 355 ft perf 5770 ft, td 5775 ft.

Orange County—Yorba Linda: Shell's Olinda Fee 4 88-16, 1764 ft n, 311 w c/l Citrus and Eureka Aves., pump 210 bbls 18.5-gr, perf 1948-1866 ft, 1812-1678 ft, top first sand 1673 ft, top third sand 1868 ft, td 1953 ft.

Ventura County—Shiells Canyon: Seaboard Oil Co.'s Seaboard-Calumet 1, 700 ft s, 340 e nwc 10-3-19, pump and flow by heads, estimated 150 barrels 30-gr, 138 ft perf 3292 ft, silty oil sand 2993-3002 ft, good oil sand 3143-3244 ft, td 3292 ft.

CALIFORNIA WILDCATS

Kern County—Failures: C. E. Beatty and C. M. Morse's O'Donnell 1, 13-29-21, in the Cymric area, abnd 1240 ft.

Chanslor Canfield Midway Oil Co.'s 17-35, 35-31-22, Midway-Sunset area, abnd 3760 ft in hard brown shale after coring 520 ft of barren gray sand topped at 3098 ft.

ILLINOIS

Clay County: McBride, Inc.'s Hancock 1, c nw ne ne 10-3n-7e, Cyp 2609-20 ft, Hardins 2424-32 ft, 91 bbls, 2620 ft.

Texas Co.'s Hinton-Elkins Comm. 2, c sw se sw 10-5n-5e, abnd 2375 ft.

H. Luttrell et al's Reed 3, c sw ne ne 15-5n-5e, Ban 2290-2307 ft, 135 bbls, 2321 ft.

Texas Co.'s Bloemker 3, c se ne ne 4-5n-7e, Weiler 2520-38 ft, 122 bbls, 2540 ft.

Texas Co.'s Bloemker 4, se nw ne 4-5n-7e, Weiler 2504-21 ft, 166 bbls, 2521 ft.

Pure's Zander 2, c se ne se 8-5n-7e, Weiler 2533-43 ft, 97 bbls, 2552 ft.

Texas Co.'s Mascher 1, c nw sw ne 9-5n-7e, abnd 2885 ft.

Kingwood Oil Co.'s Lewis 1, c nw nw nw 16-5n-7e, Weiler 2527-37 ft, 66 bbls, 2539 ft.

Clinton County: Texas Co.'s Murphy 4, c nw ne 2-2n-2w, Dev 2616-59 ft, 4½ gas, 2703 ft.

Fayette County: Carter's McCollum 6-D, c ne sw 2-8n-3e, Dev 3115-16 ft, 100 bbls, 3116 ft.

Carter's Musser 3-D, c se sw 2-8n-3e, Dev 3119-21 ft, 180 bbls, 3121 ft.

Carter's Rhedmeyer 3-4, c ne 3-8n-3e, P.C. 1579-83 ft, Weiler 1496-1507 ft, gas input, 1634 ft.

Carter's Scott 3, c sw ne ne 20-8n-3e, Weiler 1512-24 ft, 54 bbls, 1539 ft.

Carter's Dial 35-7, c nw 35-9n-3e, Weiler 1506-23 ft, gas input, 1656 ft.

Gallatin County: Carter's Crawford 2, c sw sw ne 11-8s-10e, Tar Spgs 2050-63 ft, 40 bbls, 2065 ft.

Hamilton County: Nash Redwine's Mezo 1, c sw sw se 24-6s-5e, abnd 3287 ft.

Texas Co.'s Pennington 1, c nw se ne 35-6s-6e, abnd 3123 ft.

Texas Co.'s Smith 2, c se nw nw 35-6s-6e, abnd 3145 ft.

Shell's Beagle 9, c se se se 6-6s-7e, Aux V 2972-3008 ft, 17 bbls, 3014 ft.

Pure's Mayberry 5, c se se se 7-6s-7e, Aux V 3005-28 ft, 25 bbls, 3030 ft.

Texas Co.'s Davis 13, c se nw nw 8-6s-7e, Aux V 2993-3025 ft, 28 bbls, 3038 ft.

Jefferson County: Kiowa Drlg. Co. et al's Marker et al 1, c sw ne 36-2s-4e, McCl 3044-56 ft, 245 bbls, 3061 ft.

Ohio's Lingle Consol 1, c n½ ne sw 36-2s-4e, McCl 3047-60 ft, 3066-69 ft, 524 bbls, 3073 ft.

Texas Co.'s Smith 1, c sw ne ne 33-3s-3e, abnd 2857 ft.

Lawrence County: Brinkerhoff Drlg.'s Putman 1-B, c se se ne 23-2n-12w, abnd 1415 ft.

S. W. Mitchell's Brewer 1, nw nw se 26-2n-12w, abnd 1418 ft.

Marion County: Texas Co.'s Snyder 4, c se sw ne 16-1n-2e, Ben 1918-29 ft, 167 bbls, 1929 ft.

Magnolia's Peddicord 5, c sw nw se 34-4n-1e, Weiler 1368-74 ft, 7½ bbls, 1374 ft.

Wabash County: Sinclair - Wyoming's R.

Wells Completed in the United States in Week Ended February 13, 1943

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

STATE OR DISTRICT	FIELD COMPLETIONS: New Wells: Oil	Gas	Distillate	Water Input	Gas Input	Water Disposal	Dry	Total	FIELD COMPLETIONS: Old Wells Drilled Deeper: Oil	Gas	Dry	Total	WILDCAT COMPLETIONS: Oil	Gas	Distillate	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative: This Year	Last Year
Alabama																					2
Arkansas	1		4				2	7										7		14	20
California	18							18								2	2	20	16	161	143
Colorado																				5	2
Georgia																					1
Illinois	20	1			2		9	32						1		4	5	37	33	251	343
Indiana	4						3	7								2	2	9	4	31	61
Kansas	7						2	9			1	1	1			4	5	15	37	190	276
Kentucky													1			1	2	2	4	27	30
Louisiana	8	1					4	13						1		7	8	21	3	77	163
North Louisiana	6	1					3	10						1		5	6	16		33	
South Louisiana	2						1	3								2	2	5	3	44	
Michigan	3						3	6					1	1		3	5	11	3	51	112
Mississippi																				2	30
Missouri																				1	2
Montana	2							2										2		36	23
Nebraska																					7
New Mexico	6							6										6	3	32	54
New York	11	1		7			1	20										20	18	163	189
Ohio	2	5					2	9										9	12	117	217
Oklahoma	5	1					6	12	1		2	3						15	20	179	280
Pennsylvania	37	5					2	44										44	44	321	418
Tennessee																					1
Texas	26	3				1	11	41	1			1	4			15	19	61	77	494	1,230
East Texas	3					1	1	5								1	1	6	5	30	
North Texas	5						3	8					2			2	4	12	18	112	
West Central Texas	1						3	4					1			2	3	7	9	45	
West Texas	11	1					2	14										14	12	103	
Texas Panhandle	1							1	1			1						2	10	39	
Gulf Coast, Upper							1	1								2	2	3	4	30	
Gulf Coast, Lower	5	2						7								4	4	11	11	72	
Southwest Texas							1	1					1			1	2	3	6	51	
South Central Texas																3	3	3	2	12	
West Virginia		5						5										5	10	88	103
Wyoming																				25	9
Total United States	150	22	4	7	2	1	45	231	2		3	5	7	3		38	48	284	284	2,265	3,716

Dixon 1, c nw nw nw 11-1s-13w, pay 2308-2319 ft, 66 bbls, 2319 ft.

Wayne County: Rockhill - Pure's Thomas A-1, c ne nw sw 11-1s-8e, abnd 3257 ft.

White County: Bay Pet. Co.'s Evans 3, e½ ne sw 4-4s-14w, Aux V 2795-2817 ft, 47 bbls, 2820 ft.

Pure-Carter's H. Austin A-2, c se sw nw 17-6s-9e, P.C. 2791-2810 ft, 68 bbls, 2810 ft.

ILLINOIS WILDCATS

Bond County—New Field: H. A. Hoffman's Wilson 3, c sw ne ne 24-4n-3w, Ben 1108-11 ft, 2 mcfg, 1123 ft.

Clay County—Failure: Gulf's Skelton 1, c nw nw sw, 17-2n-7e, abnd 3247 ft.

Clinton County—Failure: Rockhill's Pettus 1, c ne ne ne 9-3n-3w, abnd 1220 ft.

Smokey Oil Co.'s Friderich 1, c se sw se 7-1s-5w, abnd 2741 ft.

Jefferson County—Failure: Roy Lee, Trustee's Stirwalt 1, c ne nw ne 12-1s-3e, abnd 2832 ft.

INDIANA

Gibson County: F. B. Hallis et al's Collins 1, w½ nw nw 26-1n-10w, McCl 1822-27 ft, 40 bbls, 1827 ft.

Posey County: Paul Rossi's Dickhaut 2, ne sw ne 19-6s-12w, Cyp 2340-45 ft, 76 bbls, 2345 ft.

Central States Oil Co.'s Hermson 4, nw ne nw 30-6s-12w, Mansfield 1112-32 ft, 35 bbls, 1132 ft.

Farm Bureau Oil Co.'s Seifert 2, se sw nw 30-6s-12w, abnd 2000 ft.

Carter and Gulf's Osterman C-76 1, se ne nw 1-7s-14w, abnd 2000 ft.

Basin Drlg. Co.'s Oakland City College 2-A, sw sw ne 16-8s-14w, abnd 1496 ft.

Vanderburg County: Shell Petroleum Co.'s McCarty 6, nw sw nw 32-6s-11w, Walters 1708-24 ft, 75 bbls, 1724 ft.

INDIANA WILDCATS

Fountain County — Failure: Fountain Oil Co.'s Glascock 1, c se sw 2-18n-8w, abnd 1611 ft.

Gibson County—Failure: J. P. Babcock's Hargrove 1, nw nw nw 30-1s-9w, abnd 1712 ft.

KANSAS

Harvey County—Halstead Area: Palmer Oil Co.'s Krehbiel 1, c e½ se sw 2-23s-2w, Arb 3500, abnd 3528 ft.

Pratt County—Iuka: Cities Service's Beck 2, c se ne 12-27s-13w, Viola 4192 ft, 1000 gal acid, pump 227 bbls, 4254 ft.

Reno County—Peace Creek: Cities Service's Yust 1, sw nw nw 23-23s-10w, Viola 3775 ft, pump 201 bbls, 3780 ft.

Reno County—Zenith: Porter, Carpenter et al's Volker 1, c se sw 6-24s-10w, Viola 3727 ft, 1000 gal acid, flow 50 bbls hr, 8023 bbls, 3742½ ft.

Rice County—East Orth Area: Anderson-Pritchard's Roelfs 1, c w½ ne sw 25-18s-10w, Arb 3255 ft, abnd 3280 ft.

Rice County—Silica: Phillips' Miner 3, c ne se 35-19s-10w, Arb 3273 ft, 500 gal acid, pump 352 bbls oil 44 hrs, 681 bbls, 3281 ft.

Rice County — Keesling: Cities Service's Jones 3, c ne ne 17-20s-9w, Arb 3286 ft, pb to 3293 ft, 4000 gal acid, pump 65 bbls oil, 130 wtr, 3299 ft.

Rooks County—Laton: Vickers Petroleum Co.'s Gamble 1, c se nw 3-9s-16w, Lans 3106 ft, pay 3162-71 ft, 4000 gal acid, pump 75 bbls, 3172 ft.

Russell County—Fairport: H. L. Stuart's Dodge 1, c e½ se sw 29-11s-15w, Congl 3270 ft, pb to 3185 ft, 2000 gal acid, pump 65 bbls oil, 100 wtr, 3404 ft.

KANSAS WELL DEEPENED

Butler County — Douglas: Dean Briggs' Bandfield 1, sw sw se 18-29s-4e, otd 500 ft, abnd 1600 ft.

KANSAS WILDCATS

Barton County—Failure: Bay Petroleum Co. et al's Bates 1, se se ne 35-18s-13w, Anhy 670 ft, Base Oread 3014 ft, Lans 3089 ft with sso 3015-20 ft, 3140-45 ft, 3176-80 ft, 3185-95 ft, Base KC 3312 ft, Cong 3329 ft, Arb 3346 ft, abnd 3375 ft.

McPherson County—Failure: Phil-Han Oil Co.'s Ade 1, c s½ se se 8-17s-1w, Miss 2641 ft, abnd 2655 ft.

Mitchell County — Failure: Chas. Coats et al's Black 1, c nw ne 1-6s-7w, Topeka 2121 ft, Lans 2490 ft, Miss 3166 ft, Hunton 3395 ft, Viola 3586 ft, Simp shale 3860 ft, Arb 3930 ft, abnd 3952 ft.

Rice County—Failure: Ingling & Parker's Evans 1, sw nw sw 34-20s-8w, Topeka 2415 ft, Lans 2900 ft, Cong 3272 ft, Viola 3430 ft, Simp 3478 ft, Arb 3540 ft, 1000 gal acid, swab 2 bbls 25% oil, abnd 3580 ft.

Saline County—New Field: Deep Rock Oil Co.'s Hunter 1, ne nw sw 20-16s-1w, Lans 2010 ft, Congl 2636 ft, Miss 2674 ft, 4000 gal acid, 1500 bbls oil, 1500 bbls wtr, 2683 ft.

KENTUCKY WILDCATS

Union County—Failure: R. S. Gardenshire's Drury 1, 2-O-20, abnd 2685 ft.

Union County—New Field: Sun's Uniontown Sun's Uniontown Unit 1, 16-P-20, Tar Spgs 1890-1907 ft, 138 bbls, 1907 ft.

NORTH LOUISIANA

Bossier Parish—Sligo: Triangle Drlg. Co.'s Kerr C-5, se nw 24-17n-12w, flow 43 bbls, perf 3154-59 ft, td 3180 ft.

Caddo Parish — Shreveport: Sam Sklar's Waller Unit 1-3, 25-18n-14w, flow 52.6 bbls, 5554 ft.

DeSoto Parish—Logansport: G. H. Vaughn's and Ed Hurley's Dennis Unit 1, 3-11n-16w, perf 4920-66 ft, 2,000,000 gas, td 4972 ft.

LaSalle Parish—Nebo-Hemphill: Grubb & Hawkins et al's R. Wilson 1, nwc lot 4, 15-7n-3e, flow 114 bbls, 4237 ft.

Grubb & Hawkins et al's R. Wilson 2, sw se sw 15-7n-3e, flow 78 bbls, 4202 ft.

H. L. Hunt's Goodpine F-119 se nw 28-7n-3e, pump 10 bbls, 4294 ft.

Placid Oil Co.'s Brooks et al's 1, se sw 5-7n-3e, pump 70 bbls, 4140 ft.

Catahoula Parish—Manifest Field: Eugene Jordan's Lanier 1, 43-9n-5e, abnd 1777 ft.

LaSalle Parish — Nebo Hemphill: Harry Shulman's Netherland 1, 38-7n-3e, abnd 4260 ft.

LaSalle Parish—Olla Field: R. O. Roshko's Randall 1, 11-10n-2e, abnd 2383 ft.

Union Parish—Monroe: United Carbon Co.'s Frost 10, 5,224,000 gas, rp 940 lbs, td 2212 ft.

NORTH LOUISIANA WILDCATS

Bossier Parish: British American's Blocker 1, ne nw sw 1-22n-13w, abnd 6518 ft.

Claiborne Parish: F. R. Sylvestre's Meadows 1, ne sw 23-22n-7w, abnd 6012 ft.

DeSoto Parish: Howard Youree's O'Neal 1, nw ne 23-12n-15w, temporarily abnd 2759 ft.

Natchitoches Parish: E. H. Demetrio's Cunningham 1, ne sw sw 47-10n-8w abnd 2319 ft.

Caldwell Parish—Failure: P. L. Holcomb's Louisiana Central 1, 38-13n-3e, abnd 3496 ft.

SOUTH LOUISIANA

Calcasieu Parish—Vinton: Union Oil Co.'s Gray 5-G, north flank, 330 ft s, 2314 ft w ne c 33-10s-12w, 5¼-in 6105 ft, perf 5816-52 ft, flow 114 bbls, 5/32-in, td 6143 ft.

Plaquemines Parish — Grand Bay: Gulf's Grand Prairie Levee 13-A, 1165 ft n alg el sec 55 fr se cor, 1080 ft w at ra in 55-20s-18e, abnd 10,010 ft.

St. Charles Parish—Lake Salvador: Texas Co.'s State-Lake Salvador 18, go n 10 deg 41 min e 13,474 ft fr USCGS Mon "Cat," 5½-in 10,998 ft, perf 16,880-953 ft, flow 180 bbls, 3/16-in, td 10,998 ft.

SOUTH LOUISIANA WILDCATS

Assumption Parish—Failure: William Helis' Armelise Planting 1, se flank Napoleonville dome, 990 ft s and e fr nwc 17-12s-13e, abnd 10,760 ft.

East Baton Rouge Parish—Failure: A. J. Bankhead and T. G. Markley's McInnis 1, McInnis area, e of University field, 4663 ft e of most w'ly cor sec 58, thence s 390 ft in 68-7s-1e, abnd 7532 ft.

MICHIGAN

Aremac County — North Adams: Ervin Major's Moore 2, nw nw ne 27-19n-3e, Dundee lime, drv 2985 ft.

Clare County—Headquarters: Sun's Holbrook 1, n½ ne ne 9-20n-3w, Traverse lime, drv 3470 ft.

Clare County—Winterfield: Pure's Nearhood 1, w½ nw nw 33-20n-6w, Richfield dolomite, drv 5090 ft.

Osceola County — Reed City: Gordon Oil Co.'s Richards 1, s½ se sw 17-18n-10w, Monroe lime, pump 21 bbls, 3597 ft.

E. L. Bennight's Gable 1, n½ ne nw 6-17n-10w, Monroe lime, pump 12 bbls 3624 ft.

Van Buren County—North Bangor: N. R. Dodd's Pifer 1, sw sw nw 10-2s-16w, Traverse lime, pump 17 bbls, td 1030 ft.

MICHIGAN WILDCATS

Clare County—Failure: Gulf's Oman 1, n½ nw nw 8-17n-4w, Marshall 1509, Dundee 3904, Sylvania 5415, 4550 ft, salt water on drill-stem test, abnd 5540 ft.

Clare County — Gas Discovery: Taggart Brothers Co.'s Mills 1, c ne 2-20n-6w, Stray sand 1284-85 ft, 3,650,000 gas, 1288 ft.

Roscommon County—Failure: Mogul Oil Co.'s Hartwick 1, s½ se sw 25-22n-4w, Dundee lime, abnd 3989 ft.

Saginaw County — Failure: Del Fortney's Yurek 1, nw se se 2-9n-3e, Dundee 2739 ft, abnd 2829 ft.

Saginaw County—Merrill Field Discovery: H. C. Nelson's Butain 1, s½ ne sw 24-12n-1e, Dundee 3285 ft, pay 3289-96 ft, water 3300 ft, pb 3296 ft, 300 ft oil natural, acidized 600 gallons, pump 5 bbls.

MONTANA

Glacier County—Cut Bank: Santa Rita Oil & Gas Co.'s Jacobson 3, cne sw 23-37n-5w, cable, 200 bbls swabbing, 7-in 2605 ft top Lower Cut Bank, td 2616 ft.

Trigood Oil Co.'s Tribal-231 3, se se sw 30-32n-5w, cable, 205 bbls swabbing, 7-in csg set 3005 ft top Lower Cut Bank, td 3047 ft.

NEW MEXICO

Eddy County: Barney Cockburn et al's Grier 1, 511 ft from w and 1980 ft from s lines 31-16s-31e, flow 75 bbls, 2-in, shot 170 qts, 2985-3060 ft.

Paton Bros. and Sargent's Sargent 2, c ne ne 27-17s-30e, flow 235 bbls, 2-in, natural, 3148-94 ft.

Premier Pet. Corp.'s Arnold 2-E, c sw se 23-17s-30e, flow 125 bbls, 2-in, shot 190 qts, 3125-85 ft.

W. S. Randall (was B. Cockburn) et al's Etz 2, c sw sw 26-16s-30e, flow 200 bbls, 2-in, shot 100 qts, 2972-3022 ft.

Western Prod. Co.'s Burch 5-C, c se se 19-17s-30e, flow 225 bbls, 2-in, acid 3000 gals, 2692-3287 ft.

Lea County—Maljamar: Carper Dr. Co.'s Simon 4-R, c ne nw 30-17s-32e, flow 248 bbls, 2-in, shot 200 qts, 3635-3934 ft.

NEW YORK

Allegany County: Bradley Prod. Corp.'s Sprague farm, Alma, 7 bbls, Richburg, 1448 ft.

W. J. McKee et al's Weir-Macken farm, Bolivar, 6 bbls, 1482 ft.

Ebenezer Oil Co.'s Vincent farm, Scio, 9 bbls, Richburg, 1240 ft.

Hog Brook Oil Co.'s Pike farm, Alma, 8 bbls, Richburg, 1388 ft.

Bradley Prod. Corp.'s Norton farm, Scio, 7 bbls, Richburg, 1286 ft.

Otsquago Oil Corp.'s Pike farm, Alma, 7 bbls, Richburg, 1488 ft.

Bliven Hill Oil Co.'s Smith farm, Scio, 5 bbls, Scio, 983 ft.

Messer Oil Co.'s Buena Vista farm, Wellsville, 8 bbls, Scio, 1037 ft.

Dick Oil Co.'s Canfield farm, Wirt, 6 bbls, Richburg, 1429 ft.

Messer Oil Co.'s Koehler farm, Clarksville, 5 bbls, Richburg, 1420 ft.

Gray Oil Co.'s Smith farm, Genesee, 5 bbls, Richburg, 1388 ft.

Steuben County: N. Y. State Natural Gas Co.'s R. Lozier, Troupsburg twnshp, abnd 5364 ft.

Tompkins County: Belmont Quadrangle Drlg. Corp.'s J. Robertson 1, 1,000,000 gas, 2123 ft.

NEW YORK INTAKE WELLS

Allegany County: Walter J. McEnroe's Hoover farm, Bolivar, Waugh-Porter, 1553 ft.

Franchot Oil Co.'s Murphy farm, Bolivar, Richburg, 1433 ft.

Messer Oil Corp.'s "M." Allen farm, Alma, Richburg, 1352 ft.

Summit Oil Co.'s Doty farm, Scio, Richburg, 1255 ft.

L. H. Thornton et al's Fassett farm, Willing, Fords Brook, 1276 ft.

H. W. Patterson et al's Black farm, Scio, Scio, 854 ft.

Healy Petroleum Co.'s Garthwaite farm, Bolivar, Richburg, 1580 ft.

OHIO

Athens County: C. W. Nuzum's Fish 3, 3 bbls, 538 ft.

Ohio Fuel's Sunday Creek Coal Co. 218, 43,000 gas, 1106 ft.

Holmes County: Bell Bros.' Wolgamot 1, 68,000 gas, 777 ft.

Loraine County: Ohio Fuel's Wallweber 1, 709,000 gas, 2629 ft.

Glen Harmon's Bittner 1, 4,500,000 gas, 2460 ft.

Meigs County: Downie et al's Hampton 1, abnd 730 ft.

Morgan County: Pure's Williams 2, 1,220,000 gas, 4286 ft.

Washington County: Baker et al's Jones 1, 8 bbls, 580 ft.

C. W. McCall et al's Weber 2, abnd 1667 ft.

OKLAHOMA

Carter County—Tussy: S & D Daube and Simpson-Fell's Morgan 1, ne sw nw 4-1s-3w, sand 2688 ft, pay 2688-2734 ft, pay 2826-36 ft, pump 37 bbls oil 18 hrs, 3002 ft.

Allied Materials Corp.'s Costello 1, ne se nw 9-1s-3w, sand 2713-19 ft, sand 2731-41 ft, sand 2766-73 ft, flow 20 bbls, 2905 ft.

Allied Materials Corp.'s Gray B-1, ne ne sw 9-1s-3w, sand 2731-35 ft, sand 2788-93 ft, sand 2746-62 ft, sand 2782-85 ft, pump 50 bbls, 2910 ft.

Creek County—Wilcox: Seismograph Service Corp.'s Belford 1, nw sw se 26-15n-10e, Wx 3090 ft, salt wtr 3102 ft, abnd 3110 ft.

Garfield County—Waukomis area: Champlin's Kreji 1, c s½ sw ne 27-21n-6w, 2nd Wx 7205 ft, abnd 7533 ft.

Kay County—Tonkawa: Ingling & Parker's State 4, ne nw se 36-25n-1w, sand 2030-40 ft, abnd 2091 ft.

McClain County—Byars: Kubat et al's Prater 1, c sw se 21-5n-3e, Viola 3468 ft, flow 200 bbls, 3487 ft.

Okfuskee County—Weleetka: W. H. Pine's McFaddin 1, c nw se 22-10n-11e, Cromwell 2880-90 ft, abnd 2982 ft.

Oklahoma County — NE Edmond: Harper Turner's Harper 13, c ne nw 17-14n-2w, Bartles 5873 ft, flow 45 bbls, 5905 ft.

Osage County—Falls Dome: Cities Service's Osage 486, nw ne se 31-24n-8e, Miss 2577 ft, abnd 2590 ft.

Seminole County—NE Wewoka: Manahan's Youngblood 1, c ne sw 8-8n-8e, Wx 4280-4300 ft, abnd 4300 ft.

Seminole County—Keokuk: Magnolia's Browning 4, c e½ nw nw 14-10n-6e, Earlsboro 3345-80 ft, pb to 3400 ft, perf csg, 2 mcfg, 4365 ft.

OKLAHOMA WELLS DEEPENED

Creek County—Glenn: Gulf's Vowell 34, s½ ne sw 16-17n-12e, otd 1590 ft, Dutcher 1863 ft, pb 1572 ft, repressure well, 1881 ft.

Kay County—Tonkawa: Shell et al's Lawrence 3, ne se nw 5-28n-1w, otd 2795 ft, Layton 2757 ft, pump 5½ bbls oil, 16 wtr, 2814 ft.

Stephens County—Velma Shallow: Skelly's Robberson 1, ne ne ne 35-1s-5w, otd 856 ft, sand 861-76 ft, 2 mcfg, 876 ft.

PENNSYLVANIA

Armstrong County: Local Co.'s Shuster 1, 119,000 gas, 3450 ft.

Clarion County: Piolett Gas Co.'s Henry 2, 586,000 gas, 1115 ft.

Owens-Illinois Glass Co.'s Yeaney 1, 70,000 gas, 2562 ft.

Fayette County: Greensboro Gas Co.'s Veltri 1, 5,029,000 gas, 1474 ft.

J. H. Cornell et al's Phillips 1, 94,000 gas, 2700 ft.

Duquesne Gas Co.'s Honsaker 2, abnd 3539 ft.

Washington County: Carnegie's McClure 1, abnd 2932 ft.

TEXAS GULF COAST

Jefferson County — Big Hill: Stanolind's Fitzhugh 5, 900 ft fr e, 1650 ft fr sl of lot 3, 356-act tr, Stephen Eaton sur, 7-in 6593 ft, abnd 8500 ft.

TEXAS GULF COAST WILDCATS

Wharton County—Failures: Magnolia's Kountze-Stewart 1, s of Hillje field, 160-ac tr, BS&F 10, abnd 8615 ft.

Superior Drilling Co.'s Ferguson 3, 1½ mi sw Mackay, 127-ac lse, James Murphy Lge, abnd 5500 ft.

LOWER TEXAS COAST

Jackson County—Mayo: Texas Co.'s Robertson 2, 1792 ft fr sl, 660 ft fr el Joseph Simons sur, A-260, 171-ac tr, sand 5406 ft, 5½-in 5493 ft, perf 5406-25 and 5438-44 ft, 49 bbls, ¼-in, td 5550 ft.

Jim Wells County—Koopman: Great Lakes Carbon and Coastal Refineries' Wulff 1, 660 ft fr n and wl of 120-ac lse, sec 21, Camada Ranch subdvn, 5½-in 6003 ft, perf 5681-93 ft, 250,000 gas, spray distillate, td 6024 ft.

Jim Wells County—LaGloria: LaGloria Operators Committee's LaGloria Unit 21, 750 ft fr w, 652 ft fr nl blk 1, 4765-ac tr, 7-in 7225 ft, dual completion perf 5820-55 ft, 5910-45 ft, 5995-6040 ft, 6065-6118 ft, 48,000,000 gas, td 7402 ft.

Jim Wells County—Seeligson: Shell's Seeligson 14, 1722 ft fr w'ly wl, 759 ft fr n'ly sl, 4573 ft fr nl 990-ac tr, Willis Millican sur 335, A-291, 5½-in 6069 ft, flow 153 bbls, 7/64-in, td 6081 ft.

Kleberg County—Seeligson: Humble's King Ranch-Cabeza 12, 1980 ft fr wl, 2798 ft fr sl of A. G. King sur 50, 5¼-in 6008 ft, sand 5944 ft, flow 148 bbls, ¼-in, td 6027 ft.

San Patricio County—Midway: Phillips' Ivey 8, 1753 ft fr sel, 467 ft fr nel of 500-ac lse, sec K, Paul's subdvn, 7-in 5350 ft, sand 5294 ft, perf 5302-09 ft, flow 84 bbls, 5/32-in, td 10,005 ft.

San Patricio County—Rooke: Plymouth Oil Co.'s Welder 3, 1980 ft fr wl, 660 ft fr nl of sec 44, Welder Ranch subdvn, 7-in 7171 ft, perf 7168-71 ft, flow 216 bbls 7/64-in, td 7171 ft.

LOWER GULF COAST WILDCATS

Bee County — Failure: Bridwell Oil Co.'s Ray 1, 660 ft fr nwl, 11,550 ft fr nel Anna Burke sur, A-5, 1165-ac lse, abnd 4425 ft.

Calhoun County—Failure: Continental's Austin 3-A, 2310 ft s, 1809 ft e nw cor sec 5, blk J, Juan Cano Lge, 8964-ac lse, abnd 5963 ft.

Jim Wells County—Failure: Smith & Story's Earhart 1-A, 1350 ft fr s, 2675 ft fr wl of J. M. Graham sur, A-180, abnd 3801 ft.

Lavaca County—Failure: Shell's Neuhaus 1, Provident City area, 1890 ft fr s and el's HT&B 1, 1496-ac lse, abnd 10,335 ft.

SOUTHWEST TEXAS

Starr County—North Sun: Sun's Laurel 1, 660 ft fr sl, 1980 ft fr wl of se 485-ac tr of share 3, La Sal Colorado gr, 2295-ac gr, abnd 8542 ft.

SOUTHWEST TEXAS WILDCATS

Webb County—Discovery: Dulup Oil Co.'s Puig Bros. 2, Aviator area, 1381 ft fr wl, 1326 ft fr nl of 280-ac lse, blk 62, Albercas de Arriba gr, 5½-in 1821 ft, sand 1820 ft, flow 175 bbls, 1-in, td 1827 ft.

Zapata County—Failure: Government Wells Oil Co.'s Juan Garza de Uribe 1, 660 ft fr nel, 2820 ft fr n'ly nwl TCRR 249, abnd 2780 ft.

SOUTH CENTRAL TEXAS WILDCATS

Gonzales County — Failures: W. Stewart Boyle's Harris 1, 660 ft fr n and wl's 80-ac lse out of nw cor 369-ac tr, William Page sur, 2, 6 mi s of Waelder, abnd 4320 ft.

. W. Stewart Boyle's Ottine 1, Ottine area, 7350 ft nw alg swl fr s cor Samuel Robbins sur, thence 660 ft ne at ra to lcn, abnd 3803 ft.

Kern County—Failure: Continental's Schreiner 1, e se sw CCSD&RGNG 1597, base Cret, 1390 ft, Marble Falls 5308 ft, abnd 6010 ft.

NORTH TEXAS

Archer County: Consolidated Oil Co.'s Garrett 1, 330 ft out nwc e-225 ac of John Walker sur A-676, lcn 6000-ft test.

Tom B. Medders et al's Fuller 1, c ne sw H&TC 12, blk 1, lcn 5350-ft test.

Staley Oil Co.'s King (Richardson) 1, 330 ft out nec lot 13, J. Scott sur A-374, sd 1265 ft.

Jack County: Webster and L. G. Bradstreet's Biggers 1, 660 ft from n and 1980 ft from e lines of J. W. Blankenship sur A-1447, lcn 4000-ft test.

Continental's Weir 1, 330 ft out sec G, Kaltrider sur A-1125, lcn 6000-ft test.

Hanlon & Buchanan-Standard of Texas' Carter 1, 495 ft out nec blk 5, Wm. McDonald sur, lcn 6500-ft test.

Young County: British-American's Roach 1, 467 ft from s and 1491 ft from w lines TE&L 304, mile se Spring Creek, lcn 5200-ft test.

WEST CENTRAL TEXAS

Callahan County: L. M. White et al's Finley 1, 1260 ft from n and 330 ft from e lines nw¼ BOA 74, abnd 700 ft.

Jones County—South Noodle Creek: Cardinal Oil Co.-John Byram's Williams 2, c ne nw T&P 31, blk 18, elev 1876 ft, pump 41 bbls oil, 8 bbls water, Swastika sand 3077-80 ft, td 3082 ft.

Shackelford County — Poor Farm: R. H. Roark et al's Shackelford Co. Poor Farm 3, se nw sw BAL 4, abnd 841 ft.

Taylor County — Reddin: Butler-Horne Dr. Co.-Geochemical Surveys' Reddin 2, 330 ft from s and 1770 ft from w lines T&P 25, blk 17, elev 1771 ft, abnd 2288 ft.

WEST CENTRAL TEXAS WILDCATS

Jones County—Failure: Merry Bros. & Perini-Phillips' Largent 1, 660 ft out nwc blk 37, leag 150, DeWitt CSL sur, elev 1820 ft, abnd 3097 ft.

Shackelford County—Failure: Brown-Hancock Oil Co.'s Grimes 1, 330 ft out sec T&P 88, blk 12, abnd 1503 ft.

Stephens County—New pay Hill Pool: T. P. Coal & Oil Co.'s Hill 12-A, acet 2, 330 ft from ne and 1496 ft from se lines lse, TE&L 1122, elev 1135 ft, Bend 3195 ft, Miss 4226 ft, flow 4026 bbls, 2- to 1½-in, acid 1000 gals Mississippi, 4226-36 ft.

WEST TEXAS

Andrews County—Embar-Permian: Phillips' University-Andrews 29, c sw nw sec 29, blk 10, elev 3247 ft, flow 156 bbls, ¼-in, acid 1000 gals, Clear Fork perf 6200-56 ft, td 6300 ft.

Cochran County—Slaughter: Bay Pet. Corp.'s Mallet-Humble 1, 580 ft out nec lab 11, leag 53, Scurry CSL, flow 237 bbls, 2-in, acid 2000 gals, 5013-30 ft.

Bay's Mallet-Humble 2, 580 ft out sec lab 11, leag 53, Scurry CSL, flow 232 bbls, 2-in, acid 2000 gals, 5006-25 ft.

Bay's Mallet-Humble 5, 580 ft out swc lab 11, leag 53, Scurry CSL, flow 422 bbls, 2-in, acid 10,000 gals, 5013-28 ft.

Devonian Oil Co. et al's Duggan 21-A, 510 ft out swc lab 9, leag 55, Oldham CSL, flow 1474 bbls cas, acid 12,000 gals, 4996-5048 ft.

Devonian et al's Duggan 15-B, 580 ft out swc lab 20, leag 55, Oldham CSL, flow 959 bbls cas, acid 12,000 gals, 5028-74 ft.

Crockett County—Soma-Noelke: A. J. Rife and Floyd Scott's Bouscaren 2, 1196 ft from n and 820 ft from e lines TC 57, blk GG, 4,250,000 gas, natural, 1135-90 ft.

Hockley County—Slaughter: T. F. Morrow et al's Mallet 13, 580 ft out swc lab 20, leag 48, Edwards CSL, flow 688 bbls cas, acid 12,000 gals, 4907-54 ft.

T. F. Morrow et al's Mallet 18, 580 ft out sec lab 19, leag 48, Edwards CSL, flow 698 bbls cas, acid 12,000 gals, 4925-69 ft.

Texas Co.'s Slaughter 137, 580 ft out nwc lab 81, leag 37, Zavalla CSL, flow 1129 bbls cas, acid 10,000 gals, 4935-5011 ft.

Pecos County—Lehn: Burk Roy. Co.'s Sullivan 12-C, 330 ft from nw and 2970 ft from sw lines H&GN 72, blk 10, flow 83 bbls, 2-in, shot 60 qts 1700-20 ft, td 1722 ft.

Pecos County—Taylor-Link: Lee Pet. Corp.'s University 3-D, sw ne ne sec 32, blk 16, flow 675 bbls, 2-in, used 1000 gals, 1396-1408 ft.

Pecos County—Walker: Cardinal Oil Co.'s University 4-E, 2402 ft from s and 914 ft from w lines sec 13, blk 16, jkd 781 ft.

Cheyenne Pet. Corp.'s White-Baker 4-A, 330 ft from w and 1449 ft from n lines GC&SF 87, blk 194, abnd 2156 ft.

Yoakum County—Wasson: Honolulu's Bennett 14-A, 440 ft from s and 660 ft from e lines sec 614, jkd 1454 ft.

NORTH TEXAS

Archer County: Producers Dev. Co.'s Roach 16, 1050 ft wel and 450 ft snl of w 265½-ac TE&L 1595, pump 9 bbls oil, 3 water, sand 1259-77 ft, td 1280 ft.

Clay County: Fortex Oil Corp.'s Dallas Stock Bank-Texaco 3, 330 ft from nw and 990 ft from sw lines of e 160 of nw 440-ac tr, sec 35, Jane Duncan sur, pump 138 bbls, sand 1115-35 ft.

Clay County—Halsell: Bridwell Oil Co.'s Halsell 4-B, 175 ft s nl and 2500 ft ewl, WC Ry 17, pump 58 bbls, shot 40 qts Strawn sand 4730-69 ft.

Montague County—Stoneburg: Continental's Heard 1, 2101 ft from s and 2100 ft from w lines Limestone CSL sec 4, elev 930 ft, Bend 5988 ft, flow 271 bbls, 20/64-in, natural, conglomerate 6189-98 ft.

Wichita County: Culbertson Co.'s Waggoner Bros. 89, 360 ft from s and 2725 ft from e lines BS&F 13, abnd 666 ft.

C. Y. Gorman et al's Doyle 5, 630 ft from w and 1025 ft from s lines Geo. Wheelwright sur, A-320, abnd 1216 ft.

Magnolia's Brewer 14, 660 ft from e and 1092 ft from n lines sec 251, Waggoner Colony Lands, elev 1194 ft, Canyon 2499 ft, Ellenburger 3507 ft, abnd 3839 ft.

Young County: Mudge Oil Co.'s Harrison 11, 660 ft from n and 1000 ft from e lines F. Jaime sur A-157, Bend 3757 ft, Miss 4694 ft, flow 1188 bbls, ½-in, natural, Mississippi 4694-4707 ft.

Textor Oil Corp.-Jerome McLester's Knight 1-C, J. T. Knight sur A-2204, pump 20 bbls, lime 3739-44 ft, td 4827 ft, pb to 3869 ft.

NORTH TEXAS WILDCATS

Archer County—Junked: Ray Dawson et al's Abercrombie 1, 450 ft from e and 972 ft from s lines w½ blk 152, Harris Club Ranch, jkd 1000 ft.

Jack County—Junked: J. S. Youngblood-R. L. Foree's Clayton 1, 4393 ft from n and 1980 ft from e lines W. P. Kinkenon sur A-325, Bend 4943 ft, Barnett shale 5350 ft, jkd 5412 ft.

Montague County—Hildreth Pool New Oil Pay: Continental's Jack Hildreth 1-A, 660 ft out nec ET Ry 57, Bend 6004 ft, flow 4504 bbls 40.6-gr, 1-in, natural, conglomerate 5990-6107 ft, td 6109 ft.

Young County—New Pay: Anzac Oil Corp. et al's J. J. Martin 1-B, 660 ft out swc C. W. Townsend sur A-1642, pump 66 bbls 41-gr oil, 100 water, Canyon sand 2383-96 ft, td 2403 ft, pb to 2396 ft. Area not named.

EAST TEXAS

Houston County—Loveladv: M.G.M. Oil Co.s' Jeter 1, 660 ft out sec 101.36-ac lse, John Forbes Sur, abnd 3294 ft.

Smith County—Chapel Hill: Sinclair Prairie's Smith 2, 1610 ft ewl and 565 ft nsl of Chas. M. Hyde sur, elev 438 ft, Pettit 8172 ft, Travis Peak 8418 ft, flow 119 bbls 41.5-gr, ¼-in, acid 15,000 gals, perf 8313-58 ft, td 8428 ft.

Wood County—Quitman: Shell's Goldsmith 1, 660 ft from n and 2100 ft from w lines W. W. Lanier sur, elev 458 ft, Georgetown 5100 ft, Goodland 6166-96 ft, Paluxy 6226 ft, flow 734 bbls 43-gr, ¼-in, natural, perf 6282-6304 and 6356-66 ft, td 6432 ft.

Wood County — Hawkins: Humble's Shamburger 3-B, 467 ft from w and 1400 ft from s lines 122½-ac lse, Jas. McAnulty sur, Woodbine 4734 ft, flow 363 bbls, ¼-in, natural, perf 4856-68 ft, td 4925 ft.

EAST TEXAS DISPOSAL WELL

Gregg County—Kilgore: East Texas Salt Water Disposal Co.'s Payne 1, 1470 ft from w and 4500 ft from m/s/n lines W. P. Chism sur, td 3939 ft.

EAST TEXAS WILDCAT

Van Zandt County—Failure: Oscar Donley et al's Clark 1, 2080 ft from n and 775 ft from w lines J. A. Parker sur, elev 531 ft, Pecan 2795-2981 ft, Austin 4054-4421 ft, top Woodbine 4760 ft, abnd 4788 ft.

TEXAS PANHANDLE COMPLETIONS

Gray County: Texas Co.'s Chapman 10-B, ne sw sw H&GN 49, blk A-9, pump 196 bbls, natural, granite wash 2688-2760 and 2772-86 ft.

TEXAS PANHANDLE WELL DEEPENED

Hutchinson County: Gulf and Panhandle's Dial 106, otd 2930 ft, pump 75 bbls 38.1-gr oil, td 3000 ft.

WEST VIRGINIA

Jackson County: Spartan Gas Co.'s Walker 3, 5,512,000 gas, 5152 ft.

Spartan Gas Co.'s Walker 4, 10,000,000 gas, 4984 ft.

Raleigh County: Godfrey L. Cabot's Rockhouse 1056, 47,000 gas, 2600 ft.

Wayne County: Southeastern Gas Co.'s Fuller 2, 2,970,000 gas, 1261 ft.

Owens, Libby, Owens' Barbour 645, 133,000 gas, 4040 ft.

If You want to buy or sell equipment, be sure to see the Trading Post Section on page 56.

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CALIFORNIA

Kern County: Di Giorgio Fruit Co.'s 3, ne¼ 7-31-30, Mountain View area, lcn.

Tide Water Associated's KCL 76-8, s½ 8-30-26, East Strand area, grading.

Harp & Brown's Olcese 1, 17-28-29, Round Mountain area, rig.

Santa Barbara County: Fickert Oil Co.'s 1, 8-7-33, Lompoc area, rig.

General Petroleum Corp.'s Wickenden 2, 24-8-32, Foxen Canyon, Gato Ridge area, lcn.

ILLINOIS

Bond County: E. Burgard's L. Klaus 1, nw sw nw 14-6n-2w, lcn.

Cole County: F. D. Walker et al's Guy Sutton 2, ne ne se 36-14n-7e, dr.

Effingham County: H. H. Weinert's Ruskin 1, nw ne se 4-7n-6e, lcn.

Madison County: John Lee's Alberts 1, ne ne ne 11-5n-6w, dr.

Wabash County: C. E. Skiles' Price 1, ne nw se 19-1n-12w, dr.

Wayne County: Deep Rock's J. Anderson 1, sw nw 35-2s-5e, lcn.

Will County: Brown & Feltis' Gardner 1, se se sw 21-35n-9e, dr.

INDIANA

Gibson County: Geo. M. Cornelius' Hagenback & Pickering 1, nw ne se 2-2s-9w, lcn.

Jasper County: Wm. D. Farley's Frank E. Fenwick 1, ne nw sw 29-28n-7w, lcn.

Jennings County: Commiskey Oil Assn.'s J. E. Johnson 1, nw ne ne 23-5n-7e, lcn.

Commiskey Oil Assn.'s C. O. Keller 1, ne ne sw 23-5n-7e, lcn.

Ohio Valley O&G Co.'s J. W. Waltermeyer 1, nw ne ne 12-7n-7e, lcn.

Lawrence County: Central U. S. O&G's Johnston 1, nw se ne 36-6n-2w, lcn.

Posey County: Chas. A. Baldwin's Reichart 1-A, ne nw se 25-7s-15w, dr.

KANSAS

Barton County: Champlin Refining Co.'s Hagan 1, se se nw 27-20s-11w, dr 1772 ft.

Marion County: Ring-Mac's Decker 1, sw se nw 20-17s-1e, lcn.

McPherson County: Republic Natural Gas Co.'s Burke 1, ne ne sw 7-18s-1w, rig.

Reno County: Falcon-Seaboard's Stevens 1, sw ne ne 10-22s-8w, mi.

Stafford County: Stanolind and Derby's Van-Lieu 1, ne se ne 20-24s-13w, lcn.

KENTUCKY

Ballard County: Carl Robinson's Clark 1, 22-H-5, lcn.

Henderson County: Fisher Oil Co. & Son's E. L. Porter 1, 12-O-24, lcn.

NORTH LOUISIANA

Bossier Parish: Bering Oil Co.'s Moresi 1, sw ne se 10-22n-14w, lcn.

Bienville Parish: Placid's Nebo A-1, sw ne 11-15n-7w, sd.

Electric Gas & Oil Co.'s State 1, c w½ 8-16n-10w, lcn.

Caddo Parish: Harris & Owen's Fuller 1, se ne 4-22n-15w, sd.

Catahoula Parish: C. C. Gilger's and F. R. Jackson's Peck 1, sw nw 51-10n-8e, mim.

Claiborne Parish: Gulf's Miller 1, ne ne 14-20n-8w, dr.

Caldwell Parish: Placid's Louisiana Central 120, nw sw 9-11n-3e, sd.

Grant Parish: Pan American's Foster C-1, nw ne 2-6n-1w, mim.

DeSoto Parish: Crosby Drlg. Corp.'s Anders 1, se se 5-11n-14w, lcn.

Grand Cane Oil & Gas Co.'s O'Neal 1, se nw 24-12n-15w, rig.

C. D. Neff's Pollock 1, se ne 8-13n-12w, rig.

Oakes-Easton et al's Edgar J. Ramsey 1, nw sw 27-13n-16w, dr.

J. H. Holt's Hoffman 1, se ne 1-12n-15w, dk.

Natchitoches Parish: J. E. Watt's Fair 1, nw nw se 18-10n-10w, lcn.

Howard Youree's Reed 1, nw sw 36-10n-8w, mim.

Bayou Pierre's Brown 1, sw 25-10n-8w, spud.

Red River Parish: O'Meara Bros.' Franklin Realty Co. 1, ne sw 24-11n-10w, sd.

Cryer & Reese's Long-Bell 1, ne sw 24-11n-10w, sd.

Westgate-Greenland's Westdale Corp. 1, nw ne 29-14n-11w, lcn.

Peterson Petroleum Corp. et al's Wilkinson 1, se se 11-12n-10w, lcn.

Union Parish: Placid Oil Co.'s Frost 1, sw ne 18-23n-1e, dr.

Webster Parish: F. R. Sylvestre's Haynes 1, ne nw 29-23n-9w, dr.

SOUTH LOUISIANA

St. Landry Parish: J. S. Abercrombie and Atlatl Royalty Co.'s Charles-Community 1, South Leonville area, s 8 deg w 6716 ft, thence s 81 deg 10 mins e 895 ft from nw cor sec 23 in 23-7s-5e, lcn 12,000-ft test.

MICHIGAN

Allegan County: W. Spencer Cook's Joostbrens 1, ne sw nw 12-3n-15w, rig.

NEW MEXICO

San Juan County: Continental-Standard of Texas-Stanolind's Tocito 1, c nw sw 17-26n-18w, dr 1311 ft.

LOWER TEXAS COAST

Bee County: Bridwell Oil Co.'s Ray 2, 660 ft sw alg sel of 1165-ac lse, 2½ mi e Beeville, lcn 4500-ft test.

Jackson County: W. Stewart Boyle's Budd 1, c mi sw Cordele field, 660 ft fr n&el of 224-ac lse, IGN 7, A-158, lcn 3000-ft test.

Victoria County: Great Lakes Carbon Corp.'s Wray 1, 660 ft fr sw and sel of 320-ac lse, W. W. Nichols sur, 5 mi nw Inez, lcn 4000-ft test.

Rowan & Hope's Dodd 1, 660 ft fr ne and nwl blk 9, Agapito de Leon gr, lcn 6000-ft test.

SOUTHWEST TEXAS

Duval County: Highland Oil Co.'s Serna 1, 7 mi e of Greer, 330 ft fr s, 2310 ft fr wl of 460-ac tr, sec 523, lcn 3400-ft test.

Stanolind's Driscoll 1, 5 mi nw Fitzsimmons field, 4337 ft nw'ly alg wl fr sw cor 2800-ac tr, lcn 3700-ft test.

Lee County: Superior's Domann 1, Giddings area, 660 ft fr se and nel in most s'ly cor of n 92-ac tr of 251-ac tr, L. P. Rucker sur, lcn 3500-ft test.

McMullen County: J. W. Gorman's Atkinson 1, 1½ mi ne Loma Alta field, 2310 ft fr wl, 330 ft fr sl AB&M 125, A-55, lcn 3300-ft test.

Gulf's Two Rivers Ranch 1, 4 mi se Tilden, 660 ft fr s'ly nl, 700 ft fr w'ly wl of J. M. Campbell sur 12, A-640, lcn 8500-ft test.

Humble's Dillworth 1, 3 mi sw Tilden, 4620 ft fr s, 660 ft fr el Hugh Frazier sur 24, lcn 8000-ft test.

V. G. Schimmel's Atkinson 1, 2 mi ne Loma Alta field, 220 ft fr s, 2640 ft fr wl of s 320-ac tr of Calvin P. Wright sur 94, lcn.

Starr County: Sun's Alvardo 1, 2 mi se North Rincon field, 1980 ft fr n and el CCSD&RGNG 553, 619-ac tr, lcn 7500-ft test.

Webb County: Holland Oil Co.'s Laubscher 1, 4 mi nw Callaghan, c sw 40-ac, tr 3, share 5, J. Callan sur, lcn 5000-ft test.

Zapata County: Government Wells Oil Co.'s Hinnant 1, 2 mi sw Mirando City field, 240-ac lse in sur 110, lcn 2700-ft test.

SOUTH CENTRAL TEXAS

Bastrop County: Taylor Refining Co.'s Alexander 1, 10 mi s Bastrop, 300-ac lse, William Eastland sur, lcn 2000-ft test.

EAST TEXAS

Hunt County: Humble's Graham 1, 500 ft from s and 660 ft from e lines of Wm. Elam Sur, ½-mi w of Wieland pool, lcn 9000-ft Smackover lime test.

J. S. Morrissey Co.'s Rollins 1, 1920 ft snl and 660 ft ewl of 554-ac tr, Joseph Heller sur A-509, 3 mi w Campbell, mim for 4200-ft Paluxy test.

Wood County: Amerada's Turner 1, 467 ft out swc 51.79-ac lse, John C. Ogden sur, e edge Coke field, lcn 9000-ft Travis Peak test.

WEST TEXAS

Yoakum County: Humble's Tannehill 1, c sw ne sec 840, blk D, J. H. Gibson sur, 3 mi sw Wasson prod, mim for 7500-ft Clear Fork test.

WEST CENTRAL TEXAS

Callahan County: Hunter and F. Kirk Johnson's Martin 1, 660 ft out NWc T&P 69, blk 14, lcn.

Jones County: Fain-McGaha et al's B. Nevill 1, 2190 ft from s and 330 ft from w lines T. W. Hunt sur 260, lcn 2350-ft test.

Merry Bros. & Perini's Hattox 1, 990 ft out NEc 137.7-ac tr, J. M. Long sur No. 3, lcn.

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Men in the Industry's News

T. C. WILLIAMS, petroleum engineer for the Texas Railroad Commission in the Midland district, has entered training for a commission in the engineering branch of the Army Air Corps. He has been succeeded by John Matthew, who has been stationed at Wichita Falls.

G. H. WESTBY, Seismograph Service Corporation, Tulsa, discussed activities of the Civil Air Patrol, and C. W. Cotton, Cotton Supply Company and W. L. James, Stanolind Oil & Gas Company, the latter two members of Tulsa County Rationing Board, talked on rationing before the Purchasing Agents Association of Tulsa, February 9.

EARL FOSTER, conservation attorney for the Oklahoma Corporation Commission, is conferring with operators with holdings in the Lake Shawnee area as to the application of spacing regulations.

MICHEL T. HALBOUTY, instructor in general section, infantry school, Fort Benning, Georgia, has been promoted to major, effective February 1. Halbouty entered the service February 12, 1942, as a captain. He is a former geologist and petroleum engineer in the Gulf Coast.

HARRY D. DICKSON, construction engineer for Humble Oil & Refining Company at the Katy, Texas, gas cycling plant, has been transferred to the West Texas division office as division civil engineer.

VIRGIL A. WALSTON, assistant division civil engineer for Humble Oil & Refining Company, has been transferred from the West Texas to the Louisiana division.

JAMES V. BLACKLOCK, district chief clerk for Humble Oil & Refining Com-

Personnel of Petroleum Administration for War District No. 3

247 Mellie Esperson Building
Houston, Texas

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P. O. Box 2584

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First Alternate Director-in-Charge—Ervin O. Buck.
Second Alternate Director-in-Charge—Gordon T. Granger.

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Robert L. Carruthers, Assistant District Director.
Emmett R. Brann, Production Specialist.
Harry Leyendecker, Principal Petroleum Development Analyst.
J. Boyd Best, Assistant Chief, Petroleum Development Section.
B. G. Martin, Petroleum Production Analyst.
Lawrence W. Hewitt, Petroleum Development Analyst.

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J. Aubrey Bonham, Assistant District Director.
Richard L. Cochran, Petroleum Materials Specialist.

Natural Gas and Natural Gasoline Division

D. E. Buchanan, District Director.
Manning L. Mayfield, Assistant District Director.
James H. Graham, Natural Gas & Natural Gasoline Analyst.

Reserves Division

Dr. Frank V. L. Patten, Assistant Director.
William J. Murray, Jr., Conservation Engineer.
Harry R. Power, Petroleum Consultant.

Transportation Division

William M. Averill, District Director.

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Marshall N. Bush, Special Refining Accountant.

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WAR MEMO:

The aims behind the War Bond Payroll Savings Plan are worth repeating over and over:

1. To help pay the stupendous production costs of winning this war.

2. To siphon into production channels that portion of America's *current income* which would otherwise flood the Nation with inflationary cash.

3. To create individual backlogs of financial security for use during the industrial readjustment after the war.

4. To create a Nation-wide saving habit which will serve the interests of both Capital and Labor after the war.

Keep after that "10% of gross payroll goal"! Buy War Bonds to the limit yourself—encourage your employees to do likewise!

pany, has been transferred from Chalkley to Potash.

DR. ERNST CLOOS, professor of geology at Johns Hopkins University, gave a talk on "Method of Measuring Distortion of Primary Stratigraphic Thickness Due to Flowage and Folding," before the Shawnee Geological Society at the February meeting.

DR. C. H. WEGEMANN, United States Geological Survey, is scheduled to address the Tulsa Geological Society February 16, on "Germany Preparing for War in 1934."

HOWARD KUNSMAN, Barnsdall Oil Company, has transferred from Houston to Tulsa where he will serve as assistant to Elmer A. Markley, chief geologist.

JAMES H. DEADERICK, assistant general parts manager of Caterpillar Tractor Company since February, 1941, has been named a vice president of the company with administrative direction of the parts, servcice and traffic departments. Deaderick studied at the University of California until 1925, when he left college to engage in the contracting business. Starting in the San Leandro, California, offices of Caterpillar Tractor Company as a service department employe, he was transferred to Peoria in 1930 and made assistant service manager in 1933. The following year he returned to California as Western service manager, serving in that capacity until 1939 when he became assistant sales manager of the western division. He returned to Peoria two years ago upon being advanced to assistant general parts manager.

W. ARMSTRONG PRICE, consulting geologist of Corpus Christi and president of the Corpus Christi Geological Society, is spending considerable time this winter in Houston with headquarters at 711 Second National Bank Building. Besides attending to personal business, he is meeting several times a week with committees working on the American Association of Petroleum Geologists' project of a revision of the correlation of the tertiary formations of the Gulf Coast.

H. T. FROST, Tulsa, has become secretary-manager of the Engineers Club of Tulsa. He has been with Allied Steel Corporation.

RICHARD DUNLOP LEONARD, retired vice president and member of the board of directors of The Atlantic Refining Company, died February 1 at Ardmore, Pennsylvania, after a long illness. He was 64.

Squeaks from the Bull Wheel

Confusion at Camp

The very new recruit was strolling along, cigarette in mouth, at peace with the world, when his commanding officer approached.

He seemed a little bewildered for a moment as to the correct procedure, but finally passed by with just the suspicion of a friendly nod.

A little while later he was sent for and the following dialogue ensued:

"How long have you been in the Army?"

"Two days, sir."

"Have you been instructed to salute an officer when you meet one?"

"Yes, sir."

"Why did you fail to salute me a little while ago?"

"But, sir, I was distinctly told not to salute an officer with a cigarette in my mouth."

In-Laws Are Out-Laws

Tom took his wife and two children out to spend a week with her parents in the country, while some repairs were being made on the house.

At week-end the repair job wasn't finished and Tom telephoned to suggest that the missus extend her stay for a few days.

"I will not! You come right out and get me. I can't stand living with in-laws any longer."

"What do you mean? They're not my folks; they're yours."

"Well, after you're married, they're all in-laws!"

Second Choice

The youngster brought his coupe to a shuddering stop, worn-out tires flapping in the breeze, in front of a neighborhood movie house. Oblivious to sidewalk listeners, he gave the girl beside him a mighty hug and said:

"You gotta make up your mind, Honey. Shall we get a license, hunt up a preacher, and get married—or spend the last evening before I'm inducted in this silly show?"

The girl appeared undecided. She got out of the car and studied the current attraction advertised on the boards in front of the movie. With an unmistakable expression of disappointment, she returned to her waiting escort.

"No Micky Mouse," she sighed. "Let's get married."

Poor Choice

A small girl asked her mother: "If I grow up will I have a husband like papa?"

"Yes, my dear," mother replied.

"And if I do not get married will I be an old maid like Aunt Susan?"

"Yes," was the reply.

The little girl thought for a minute, put her hands to her head and said: "Well, I am in a fix."

Silly Billy

A woman went one afternoon to bring cheer to the mentally sick. In one room she observed a man holding a stick, to which was tied a piece of string. He was dangling this in the sink.

"Well, my good man, and what are you doing?"

"Fishing."

"Are you catching anything?"

"Don't be silly. In the sink?"

Good Precedent

"Do you think I'm going to wear this old squirrel coat all my life?"

"Why not, dear? The squirrels do."

Trade Marks

"Haven't I shaved you before, somewhere, Sarge?"

"Nope, I got that scar at Pearl Harbor."

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& COOLERS
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GOTT Water Cans are the practical way to keep drinking water cool for long periods, protected from impurities and always handy to the job. Snug fitting large removable top, strongly built to withstand rough usage. GOTT Water Coolers have extra large covers and a handy non-leaking push button faucet. Your Supply Store has them, get one today! . . . . . .
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Made in 2, 3, 5, 8, 10, 15 and 20 gallon sizes.
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WINFIELD, KANSAS
KEEP PURE DRINKING WATER ALWAYS HANDY

Notes for the Equipment Buyer and User

Practice Recommendation For Wire Rope Approved

A simplified practice recommendation for wire rope has been approved for promulgation, according to an announcement by the Division of Simplified Practice, National Bureau of Standards. It will be effective February 15, 1943, and will be identified as "R198-43."

The program, which lists sizes, construction, grades and breaking strengths of most commonly used wire rope, was developed by engineers of the wire-rope industry to serve as wartime conservation measure and as guide for post-war practice.

It is concerned primarily with items produced for stock purposes, and does not attempt to deal individually with the numerous and particular end uses to which wire ropes are put. These special purpose ropes will be furnished by the manufacturers only when their necessity has been demonstrated in the light of the war production program.

This simplification program, the result of long study by the industry, was passed through the regular procedure of the National Bureau of Standards at the request of the War Production Board. General adherence to the recommendation will result in reduction in variety from 973 items to 643, or 33.9 percent. The major production and use of wire rope and, therefore, the predominant tonnage, is covered by four different rope-constructions, where the reduction in variety will be from 352 items to 182, or 48 percent.

Pending printing of R198-43, information concerning this recommendation may be obtained upon request from the Division of Simplified Practice, National Bureau of Standards, Washington, D.C.

National Supply Company Awarded Army-Navy E

The National Supply Company and its employes were presented the Army-Navy "E" in ceremonies held at Toledo, Ohio, February 10.

Lucey Products Company Enlarges Texas Offices

The Texas division of Lucey Products Corporation has enlarged both its offices and personnel at Dallas and is now located at 1206 Continental Building, according to Eric G. Schroeder, vice president.

Don D. Deason has been added as sales representative and Mrs. Adele C. Halpin as office secretary.

Brewster Company Is Awarded Army-Navy "E"

The Brewster Company, Shreveport, was awarded the Army-Navy "E" in ceremonies February 4, for outstanding production achievements. The address and presentation of award flag was made by Colonel E. C. Bomar, district chief, Birmingham ordnance district. A. Olin Price, vice president and general manager of The Brewster Company, accepted the award. Presentation of award pins to workers was made by Lt. Commander Kenneth C. Elliott and accepted by Herbert A. Harlan, production manager, and Earnest D. Garrett, chief engineer.

Hyatt Bearings Division Awarded Army-Navy "E"

Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey, was awarded the Army-Navy "E" for exceptional achievement in the production of war equipment. Ceremonies were held January 22.

National Cylinder Gas Opens San Francisco Office

National Cylinder Gas Company (Pacific Coast) announces opening of a new office and stock room located 326 Howard Street, San Francisco.

Complete stocks of electric and acetylene welding accessories will be stocked.

Metallizing Process

Metallizing Company of America, 1330 West Congress Street, Chicago, Ill., has issued a catalog which describes and illustrates various types of metallizing for rebuilding worn parts, with case histories of certain extensive reclamation jobs. The various types of equipment necessary for metallizing are also listed enabling estimates to be made on complete set-up for company installation if too far from regional metallizing unts.

Cameron Iron Works Again Honored for War Work

An announcement has been made by the Navy's public relations office and Cameron Iron Works, Inc., that the Navy Board for Production Awards has granted renewal of the Navy "E" award to Cameron Iron Works, Inc., which is the fourth such award made to Cameron during the past two years.

Notification of the award was made to J. S. Abercrombie, president of Cameron Iron Works, Inc., by C. C. Bloch, Admiral, U. S. Navy (Retired), chairman, Navy Board for Production Awards.

"I am glad to advise you that after careful consideration at its last meeting, the Navy Board for Production Awards, granted a renewal of the Navy "E" Award to Cameron Iron Works, Inc., for an additional period of six months dating from January 25, 1943.

"This renewal grants you the right to add a third star to your pennant. I am therefore forwarding to you through the commandant of the Eighth Naval District a new pennant with three stars affixed, which you should receive in the near future.

"You were one of the first group to be given this award. By continuing to hold it for three successive six months periods, you have all demonstrated your determination to stick to the job of supplying our fighting forces with the weapons they need, and will continue to need, until the Axis powers are finally and completely defeated."

W. C. Norris, Manufacturer, Tulsa, was presented the Army-Navy E Award recently before a gathering of 1000 employes, their families and special guests. Holding the pennant are, left to right: Col. Merle H. Davis, St. Louis Ordnance District; Capt. J. F. Donelson, Naval training school, Norman, Oklahoma; W. C. Norris, president, and Don S. Bowers, vice president and general manager of the company, and W. G. Skelly, president of Skelly Oil Company, who acted as master of ceremonies.

Completing our first year at war America takes stock of its position, sets its sails, grits its teeth and is off like a thunderbird on the journey to Victory. No good American doubts the ultimate outcome for the nation; we are now confronted, however, with the gravity of our task, with the need to do the job well and do it quickly. The better we do it the longer will the peace last. The quicker we do it the less will be the price we pay in life, suffering and pain.

Bonds are the agents of Victory. Buy them for just that . . . The more you buy, the quicker you buy, the sooner we can all return to our normal American Way of Life.

★

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Now used exclusively by U. S. Coast Guard. No guests taken 'til Victory has been won.

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